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SATURDAY, SEPTEMBER 19, 1863.

CONTENTS.

PAMPHLETS ON POLAND.

WE have before us two Pamphlets on the Polish Question antagonistic to each other. The one is the pamphlet entitled "*L'Empereur, La Pologne, et L'Europe,*" published in Paris some six weeks ago, and purporting to be the expression of the views of the Government of Napoleon III. on the Polish question at that time. The other is a reply to this pamphlet, also in French, but published at St. Petersburg, whence copies have arrived within the last few days. It is entitled "*Réponse d'un Russe à la Brochure Française, 'L'Empereur, La Pologne, et L'Europe.'*" Who the Russian pamphleteer is does not appear; but, doubtless, the pamphlet is, in some sort, the counterblast of the Government of the Tsar to the blast which it presumes to have been blown in Paris by the direction of the French Emperor. Between the two pamphlets there is struck out such an aggregate of *pros* and *cons* on the Polish question as the judicial mind of England may like to consider. And, as the Polish question is with us no question of party-politics, but pre-eminently a question yet shaping itself in the national thought, and soliciting whatever information may help the conclusion, some abstract of the views of the two opposed pamphleteers may here be given.

The French pamphleteer begins with an apology for the French Emperor for not having plunged in hot haste into a war for the emancipation of Poland. "Doubtless," he says, "had his Majesty the Emperor consulted only the impulse of his own heart, a decisive word would long ere now have been spoken." But, in politics, the author adds, the heart must be ruled by reason; and though here, as in private matters, duty is the first consideration, yet the choice of the right time for action is of supreme importance. Now the Polish question, he proceeds to say, is a vast question. "If the suppression of this nation in the last century changed the axis of the political world, its re-establishment now would affect the existence of almost all the European states." None of the anti-imperialist parties in France, at all events, have a right to twit the Government of the Emperor with dilatoriness in the Polish cause. The Legitimists! what did *they* do for Poland in 1815 or afterwards? The Orleanists! what, with all their promises, did *they* do during their tenure of power in France? The Republicans! in 1848, when Lamartine represented them, did *they* not, equally as in 1794, when Robespierre represented them, back out of all real concern with the Polish question in mere bows and general phrases? Napoleon I., and only he, did anything for the Poles. He did not do so much as he wished to do, and he repented at last of not having done more; but no one did so much. And good-will to the Poles is hereditary in his dynasty. Still, considering the complex relations of the Polish question—considering that the three powers of Russia, Austria, and Prussia might make common cause against any movement for the reconstruction of ancient Poland—it behoved the present Emperor of the French to proceed with care. He had proceeded with care! He had been especially considerate of the feelings of Russia. Both before the Crimean war and after did he not do everything possible to show his real friendliness to the Tsar's government? But the Polish insurrection of the present day is a great fact. It cannot be ignored; and least of all by the French Emperor, the heir of the first Napoleon. "When there is a fire *within* a house, the owner may, if he likes, claim the right of extinguishing it himself; but, when the flame gains the roofs, and the whole house is burning, then not only the nearest neighbours, but every one, has the right to concern himself in the matter, and to see that the cause of the fire is made to disappear." The Polish insurrection is no longer a small revolt which Russia can trample down; it is a great rising of a people. In what relation shall the French Emperor place himself to this great fact? Even were there no hereditary zeal for Poland in the heart of the French people, even were remembrance of Poland not an obligation of the Napoleonic dynasty, even were there no duties on the part of France to the Catholic religion oppressed in Poland, would not the ruthless conduct of the Russian Government towards the Poles, before and since the rebellion, furnish the answer? "In truth, there is not here only a question of nationality, but, before all, a question of humanity. It will not be without danger to Europe as a whole if certain rough-shod modes of government, which are not European at all, but Asiatic, should be acclimatized within her bounds." England has, on the whole, behaved well in the Polish question; Austria, considering her difficulties, has also behaved well; only Prussia, under some infatuation, has boggled and blundered. France must act! The method of diplomatic remonstrance is not yet exhausted (*was* not, we should now say, for the pamphlet is six weeks old); but, should that method fail, France must act! And Russia, with her recollections of the Crimean war, ought to know that action would not be difficult. "An Anglo-French-Swedish fleet might operate in the Baltic at the same time that an Anglo-French-Italian fleet might appear in the Black Sea. One would desire to avoid bringing the theatre of the war into the centre of Europe. The frontiers of the Russian Empire towards the West would have to be strictly guarded, and this would be the part naturally devolving on Austria and Prussia." On Prussia—ah! there would be the rub! But, in this Polish question, one would be as considerate as possible of German, and even of Prussian feeling. The sole demand we would make on Germany would be to "borrow a passage so as to reach Russia through Prussia." Let the Russian Government ponder all this. Let not the Tsar and his admirers count on staving off the question by diplomatic delays till the winter, so as to be able to deal with the insurgents in the season of snow and frost when no help from France or the West could reach them. Let them remember that the battle of the Alma was won on the 20th of September, and that it was on the 14th of October that the French conquered at Jena!

Such is the French pamphlet. It is not so ably written as some other Napoleonic pamphlets we have seen. But we note in it two things which we have noticed in all Napoleonic pamphlets—the absolute and systematic personification of all France in the individuality of the Emperor; and the entire absence of every form of that idea of non-intervention which figures so much in the politics of England. In fact, Napoleonism means intervention; and perhaps it is because this *is* its meaning that it now represents France.

Our Russian pamphleteer, in point of style, comes after his opponent like a lumbering wooden waggon after a light gig. Nevertheless, he does say something substantial and to the point. First of all, he pretends to disbelieve—in irony, we must suppose—that the pamphlet to which he replies has any sanction from a potentate so wise as the Emperor of the French. He will treat it only as the production of an anonymous publicist! Then he complains of the too great rapidity of this publicist. He is so rapid that he does not even settle his terms. He has written a pamphlet in favour of the reconstruction of Poland; and he does not say what that Poland is which he desires to reconstruct. Is it the Poland of 1772, with Galicia, Posnania, and the nine Russian provinces? Or is it the Poland of 1815? Or, finally, is it a Poland of new concoction, comprehending the Duchy of Warsaw, with Lithuania, Volhynia, and the Ukraine? Giving his opponent the benefit of supposing him to have had the most feasible of the three notions dimly in his mind—to wit, the second—the Russian pamphleteer joins issue with him on that supposition. The reconstruction even of such a Poland he avers to be a chimera. "In politics, more than in business," he says, "it is indispensable, before undertaking any great affair, to count the cost." And what would be the cost of an enterprise on the part of France, or of any European coalition of powers, for the reconstruction of Poland? It would be enormous, the pamphleteer says. The whole Russian nation, he says, are unanimous, as if sworn by a great oath, to back their Tsar in maintaining the integrity of the Russian Empire as it now is. Against a Russia thus unanimous all the rest of Europe would dash in vain. Napoleon I. marched against Russia at the head of twelve peoples, with 600,000 men under his command; but with how many men did he return? Admit, then, that there were now a coalition against Russia on the Polish question, and admit that this coalition were formed under the most favourable circumstances possible, "still one would have to consider that a nation of sixty millions, electrically excited as Russia is, and guided by a sovereign of immense popularity, would bring to the attack a resistance of which the siege of Sebastopol and the war of 1812 can give but a very feeble idea, seeing that these sixty millions are free men ready to fight, that they are a people elevated by knowledge, and who have been fretted and irritated in the most sensitive fibre of their national being." Here certainly is defiance for all Europe; but, in the rest of the pamphlet, it is evidently intimated that there is no belief at St. Petersburg that Great Britain, or Austria, or any other European power—except France—cares so much about the Polish question as to put itself in jeopardy or go to any expense on account of it. France, says the writer, is the only nation that goes to war for an idea. "*Mais encore,*" he adds, "*y a-t-il idées et idées;*" and the idea of Polish independence is not an idea of the right kind. To prove this there is the usual cut-and-dry allusion to the anarchy and utter incompetence of the Poles while they yet were a nation; and the equally usual and cut-and-dry assertion that the present Polish outbreak is the mere outbreak of a few hundreds of thousands of Polish nobles, unsupported by the real Polish people, and depending only on encouragement and the chance of assistance from without. Alexander II., it is maintained, was doing everything

for the Poles that any sound human reason could desire at the very moment chosen for rebellion against him. And then—after some quotations from the memoirs and despatches of the first Napoleon, intended to prove that he did not care so much for Poland, after all, as is generally supposed, and even offered on one occasion to Alexander I. that, for his part, "the words Poland and the Poles might disappear, not only from political transactions, but even from history"—the pamphlet concentrates itself in a keen, ironical attack on the present French Emperor:—

The Emperor Napoleon III. may be drawn towards the reconstitution of Poland by considerations appreciable by his high wisdom, but which, to a certainty, cannot be based on the political traditions of his dynasty. "His Majesty," says the anonymous publicist, with an assurance at least indiscreet, "will do something for Poland, without doubt, but at his own time and in his own manner." We have not the presumptuous boldness to prejudge the future decisions of the Emperor Napoleon III.; but what is incontestable is that he has already given more than one proof of his active solicitude on behalf of several peoples. He has done "something" for Turkey since the Crimean war. He did "something" for Greece in causing it to be occupied by his troops at the same period. He did "something," and he was disposed to do more, for Italy. He did "something," and he continues to do it, for the Holy City, which has enjoyed for fifteen years the support and the protection of a French army. With a remarkable promptitude he did "something" for Syria. In China, in Cochin-China, at Madagascar, and, above all, in Mexico, he has done many "somethings." If he has done nothing for North America and South America, it is not for want of good will. History offers few examples of a solicitude and an activity so universal. Few flags can boast of having been borne and displayed in so many different places. But have not even generosity and self-abnegation their limits? Would not France be in the right in showing herself a little jealous of this solicitude truly œcumenical; and, while feeling the just satisfaction of her national self-love, may she not say one day, or at least think underhand, that the solicitude of the Emperor, and the strength and riches of the country, are lavished and absorbed without her own bounds to the detriment of the people that has most claim upon them? May she not, in the end, attribute to these foreign preoccupations the delay that has come upon that "crowning of the edifice" so generously promised and so patiently waited for? For the rest, if one government assumes the whole burden and responsibility of the regulation of the interests of the entire world, what remains for the others to do?

This is rather sharp, and is creditable to the wit of St. Petersburg. But the pamphlet, it will be seen, leaves the Polish question where it found it. All that about the unanimity of the Russian nation for the retention of Poland is, we should fancy, a story for the "marines;" and, of the fine things that Alexander II. was doing for the Poles when they chose to rebel, no inventory is given.

For the moment it may be the part of Great Britain to read pamphlets on the Polish question, whether they be French or Russian, and so acquire the information necessary to make up her mind. But this speculative state of things, it would seem, cannot continue long. As far as we have seen, there are three parties among us on the Polish question. There is, first, the party of those who have been instinctively enthusiastic all along for Poland as one of "the oppressed nationalities." This party, if not so numerous as in France, includes, we should fancy, the bulk of the British people not possessed of the political franchise. There is, secondly, the party of those who do not believe in Poland, and never did—who have at their fingers' ends the old story of the natural worthlessness of the Poles in their palmy days of elective sovereignty and the *liberum veto*, and think the *plica polonica* a sufficient set-off against such Polish gifts to Europe as the Copernican astronomy and Sobieski's beating-back of the Turks, and vote the Polish question a nuisance, and maintain that the best thing for the Poles would be that Russia should swallow them up and fustigate and pound them into usefulness. This is a considerable party among our cynical men of education; and the *Times* represents it for the present, with the necessary concession to the phraseology of the first party. But there is a third party growing among us, whose conclusions in the end will perhaps be more in accordance with the hot instincts of the first than with the cold indifferentism of the second. This is the party of these who see that the future of the Slavonian race is a subject of interesting study, who are aware that the present political arrangement of that race is and can be nothing more than one of provisional chaos, and that the tendency must be to a division of the race into nearly equipollent masses, and who consequently are on the watch for those natural cracks in the vast aggregate which indicate what the boundaries of the several masses are to be, and would have our policy regulated by the direction of these natural cracks, even should one of the first results be a new experimental Poland.

CURRENT LITERATURE.

MR. KINGLAKE'S FOURTH EDITION.

The Invasion of the Crimea: Its Origin, and an Account of its Progress down to the Death of Lord Raglan. By Alexander William Kinglake. Two Vols. Fourth Edition. (Blackwood and Sons.)

THE peculiarities of this fourth edition of Mr. Kinglake's first two volumes of his great work are explained in an advertisement prefixed.

In the first place, the original text remains as it was. "Not a word has been withdrawn from the text, and not a word has been added to it." The spelling of the names of several English officers and of one foreigner has been corrected, and one sentence in the original second volume has been moved forward to a page farther on; but this is the sole amount of alteration in the text.

The changes, then, in this fourth edition, as compared with its predecessors, consist exclusively (in addition to the author's advertisement prefixed) in the insertion here and there of new notes, which are easily distinguishable from the original notes by the words "*Note to 4th Edition*" appended to each of them. These new notes are of various kinds. A good many of them simply bring forward additional authentications of what is stated in the text. Some of them, however, are of the nature of corrections; and it is to these that Mr. Kinglake more particularly calls attention in his prefixed advertisement. His book having undergone, he says, a rather extraordinary amount of scrutiny, it could hardly be but that errors would be here and there detected; and it has, of course, been his duty to keep as accurate a register as possible of all real errors so detected, so as to make the due amends. Of corrections which he has thus felt himself bound to make, he makes a threefold classification, according to the sources from which they have come. In the first class he places those corrections which have been furnished him personally or by letter by public men and officers who have read his work. In the second class he places those corrections which he owes to the criticism of the periodical press; and there is evidently a grim satire in the precision with which he records the fact that, after all the enormous criticism and re-criticism of his book by newspapers and periodicals—forming a mass of writing many times larger than the book itself—he is obliged to the periodical press for exactly *four* corrections, and no more, in that portion of his narrative which is retrospective of events and of the career of public men before the Crimean expedition, and for exactly *six* corrections, all of them spellings of proper names, in the rest of his book. Far more considerable in number are the corrections that have come from a third source, which is thus indicated:—

Besides the unnumbered strangers and friends who have addressed to me private communications on the contents of the book, and besides the whole host of those who speak to the public through the medium of the periodical press, there is one persistent scrutiniser who (so far as concerns all questions of dry fact) has hitherto proved more formidable than all. He alone has succeeded in proving that, here and there, there is a mistake—slight enough perhaps in itself, but—occurring in a place where, to point to it, is to fix upon the part of the narrative in which it appears a small, yet ugly blemish. For some years this caviller took an interest in the progress of the book, and it is believed that he still wishes well to it; but, in his determination to insist upon strict accuracy without the least regard for the flow of the narrative, he is steadfast and pitiless. What makes his scrutiny so formidable is, that—without the least merit on his part—he has chanced to become possessed—nay, is every day becoming more and more possessed—of the knowledge, the constantly accruing knowledge, which enables him to find fault with effect. This persistent, implacable critic is no other than the author himself.———Of the way in which I break in and find fault with the book wherever truth bids me do so, I can best speak by giving a single example. Guided by Sir Colin Campbell's narrative of the operations of his brigade at the Alma, I narrated the advance of the 79th Highlanders against the flank of a Russian column then marching across its front, and—catching animation from that strangely kindling power with which Lord Clyde used to speak of these scenes—I said that the 79th "sprang at the flank" of the Russian column. I never knew of anybody except myself who ever found fault with the accuracy of the sentence. But it happened that, long after the publication of the book, and for a purpose having nothing to do with the movement in question, Lord Clyde, one day, brought me a paper, written by an officer of the 79th, and containing more minute details of the advance of the regiment than had previously come to my knowledge. From these details I gathered that, although the 79th had advanced exactly in the direction I described, and against the flank of the Russian battalions then marching across its front, it had advanced more deliberately than I had supposed. I no sooner read this than I felt that my expression, "sprang at the flank," indicated a greater swiftness of attack than was consistent with the bare truth, and therefore needed to be qualified. Lord Clyde did not agree with me; he thought the expression sufficiently accurate, and deprecated the notion of my qualifying the words; but I was steadfast in my determination to show what I myself judged to be the very truth, and therefore it is that, by a qualifying note, I wilfully mar and deface the sentence to which I append it. This is only one example of the rigour with which the book is treated by its author.

From the tone of this passage, which is very much the tone of the advertisement throughout, it will be seen that Mr. Kinglake is still Mr. Kinglake, and more than a match for the legion of his assailants. The same appears in some of the new notes, where he takes a quiet pleasure in punishing some of the journals that attacked him most acrimoniously—and particularly the *Edinburgh* and the *Quarterly*—by gravely quoting them as authorities in support of statements virtually disowned by them when they came to review his book. On the whole, this fourth edition is a triumph for Mr. Kinglake; and, remembering the utterly unworthy way in which he and his book have been treated in certain quarters, we are glad of it. By his plan of reprinting the original text exactly as it was, and making corrections only in footnotes, he has made conspicuous the smallness of the amount of correction rendered necessary in the book after all the uproar about it, and has thus strengthened the impression of his zeal for accuracy from the first. He has himself, he tells us, had his views as to the possibility of getting at the real truth in history considerably modified by his experience in the case of his own book. The passage is worth quoting:—

Until after the publication of the book, I think I was as much inclined as the generality of men to be doubtful of the possibility of getting very close to historical truth; and I knew, of course, that the occurrences of a battle-field are especially hard to seize; but I must acknowledge that the supply of fresh, confirming proof by which I now find myself supported, has done something towards lessening any tendency I had towards this kind of historical scepticism.

Of course all this does not affect Mr. Kinglake's liability still to that kind of criticism which should inquire whether the prior philosophy of men and things, which Mr. Kinglake brought to the interpretation of the facts which he took such pains to collect accurately, was such as to to constitute him altogether a trustworthy historian. But from this point of view, too, as we have already said in these pages, we believe that a very high estimate indeed ought to be formed of the worth of Mr. Kinglake's work.

THE STORY OF A MONOMANIAC.

Shirley Hall Asylum; or, the Memoirs of a Monomaniac. Edited by the Author of "Dives and Lazarus," &c. (W. Freeman.)

THIS is a remarkable book, both on account of the nature of the subject and the unusual merit of the execution; but even more so from the peculiarities of treatment which isolate it from the mass of contemporary fiction. It is a novel of the old school, such as would at one period have claimed no attention on the ground of originality of manner, but now so completely identified with an extinct fashion as, save for an occasional allusion to the topics of the day, almost to raise a doubt whether we are reading a composition of our own times. No characteristic of modern literature and art is more observable than their ever increasing tendency towards preciseness of detail. As the first explorers of a country seize upon its bolder features, and leave minute investigation to their successors, so, where the old novelists were rapid and decisive, with a freedom of handling which, if not exempt from the reproach of carelessness, at all events conveyed the impression of power, their modern representatives are sedulously exact, and seem to consider nothing trivial, if only characteristic. We meet nothing like the modern vivisection of feeling and motive in any of the old masters but Richardson; the personages are set before us from the first just as they are intended to continue, and we are rarely admitted to see character in the making. On the other hand, there is nothing in which good contemporary writers more excel, or which they are fonder of attempting, than the exhibition of the power of circumstances upon character—its slow development amid a host of contending influences, which combine to determine its shape, its texture, and its hue. The very name of Allworthy, for example, describes the bearer by one graphic touch; Jones and Blifil are set broadly and clearly before us from the beginning; but we never fully understand any of George Eliot's personages till we have finished their histories, and we feel even then that she might have told us a great deal more. Each method has its advantages; and ours is manifestly that most natural to an age engrossed with many anxious problems, the counterpart in prose of the refined subtlety of a Tennyson or a Browning, as contrasted with the clear objective delineation of a Scott. Variety is, nevertheless, acceptable; and we are happy to encounter so able a representative of the elder school in an author who neither dissects nor speculates, nor paints his characters with a succession of microscopic touches, but simply narrates in the simple, blunt manner befitting colloquial intercourse. What is thus lost in elaboration is amply regained in the impression of reality; and, if the author's former works resemble this, we are not greatly surprised at their having elicited a comparison with Defoe, however little adapted they may be to sustain it. A more appropriate parallel might be instituted between them and the works of Godwin and his American rival, Brockden Brown. Like Godwin, the writer is an original thinker; like him, he unites a calm temperament to a taste for paradox; his style is characterized by the same quiet energy; while Falkland's secret and St. Leon's supernatural endowment are fair counterparts to that "blot upon the brain," which constitutes the central interest of all these illustrations of monomania. In his preference for the morbid and obscure processes of mental action, in his conception of human life as subjected to the operation of exceptional circumstances, the writer strongly recalls Brockden Brown; but, while there is infinitely more composure, clearness, and probability, there is little of that weird power which fascinates while it agitates the reader of "Wieland" and "Edgar Clitheroe."

The work consists of a cluster of narratives, hanging, like keys upon a ring, upon the story of an insane barrister endowed with a taste for engineering, developed into monomania by the grief arising from a domestic loss. Within the precincts of Shirley Hall Asylum he becomes acquainted with the histories of his companions in misfortune, five or six of the most striking of which are successively recorded. They are of various degrees of interest; but all are equally distinguished by a minuteness and circumstantiality, and a matter-of-fact air, irresistibly conveying the impression of transcripts from actual life; nor would it in the least surprise us if this were the case. On the other hand, there is little to evince a first-hand acquaintance with insanity; the author is more successful in exhibiting the results than in tracing the operation of the disturbing circumstances to which the misfortunes of his personages are referred, nor are his portraitures of the insane so lifelike as, with his remarkable talent, would probably have been the case had he lived much in their society. Next to the clearness and circumstantiality of his narrative, his chief strength lies in the delineation of the affections, and the slow disintegration, as from dropped vitriol, of the texture of a sensitive mind under the agony of domestic bereavement. "Mainwaring's Confession," "The Story of a Clergyman," and "Domestic Affection" all belong to this class, and are decidedly the best in the volume—more particularly the first. It is impossible to render justice to their merits by extract, for the impression of actuality, without which they would be nothing, depends upon the strict preservation of an easy sobriety of tone, eschewing every semblance of calculated dramatic effect. If ever under any temptation to fine writing, the author has evinced a laudable faculty of self-control. The most animated passages of his book are occasional outbreaks of dry, ironical humour, as when the patients assemble to consider the propriety of deposing their keeper:—

> I waited patiently for some one to speak; but, as no one appeared willing to take the lead, I again repeated my invitation. After a little time a gentleman begged to offer a few remarks. He began lucidly enough, and spoke of the doctor's behaviour most rationally; but as he progressed he diverged considerably from the subject, till at last I was obliged to call his attention to the question before the meeting, as I found he had got into a disquisition on the uses for which Providence had designed the tobacco plant. He became exceedingly angry at my impertinent interference, as he called it, and left the meeting. I then inquired if any other gentleman would like to address the meeting, but no one answered. I next endeavoured to give them courage by speaking myself. I showed that, by tacitly standing by while the doctor was ruining his wife and family, we were, to a certain degree, making ourselves participators in the matter, and that common humanity should induce us to interfere. That, even if the doctor were in his right senses, it was derogatory in us to admit his authority while pursuing his absurd occupation; for a man of science, however learned, however humane, was, while irrationally following up a ruinous hobby, a just object of ridicule and contempt even to a community of lunatics. This sentence, which I had hoped would have produced a most favourable effect, had one unfortunately precisely the contrary, for each seemed to think I alluded personally to him in the term lunatic, and that I excepted myself. I had great difficulty in overcoming the unfortunate impression; but at last I succeeded. In the end, a considerable amount of animation was aroused among them by my eloquence; and I was on the point of explaining to them my plan for setting the doctor's authority completely at defiance, when, unfortunately, that gentleman made his appearance at the further extremity of the walk, and all my auditors, as if by magic, immediately vanished, with the exception of Mme. Reumont, who faithfully stood by me to the last. I must confess, however, so strong is the force of habit, that I felt my courage rapidly diminish when I saw the doctor; and even poor Xerxes' cheek became paler than usual. My alarm increased as the doctor approached us, till it became too great to bear. I then offered my arm to my fair companion, and, turning down a side walk, we made our escape in a most undignified manner.

It should be explained that the offence of the doctor in the eyes of the monomaniac consists in the expense the former is incurring in perfecting an improvement in organ-building, the more intolerable as the lunatic is himself in confinement to prevent his ruining his family by his costly efforts to construct a machine for generating mechanical force *ad infinitum*. In fact, the doctor *does* seem, in his way, almost as decided a monomaniac as the patient, and the irony of this conception reminds us forcibly of Tieck's novel, "Die Reisenden." In this story a sane, if not over wise, young man is carried off to an asylum in mistake, and does not learn where he is till he has been some time among the more rational patients. The first expression of his horror throws the whole establishment into commotion, just as, in the quotation given above, we have seen the effect of the monomaniac's eloquence jeopardized by the unfortunate employment of an unparliamentary word. Like the narrator here, he is made to exhibit himself as essentially no more sane than the rest; and when, some time after his deliverance, he returns to visit the asylum, he finds the superintendent sitting in solitary grandeur—for his own faculties have given way, and he has turned his patients out of doors. If our author never saw this story, the coincidence is certainly very remarkable. There is another, equally singular, but certainly accidental:—"I once," says one of the interlocutors,

> heard a clergyman deploring the total ignorance a preacher was kept in, during his sermon, as to the effect it was producing on the minds of his congregation. "An actor," said he, "receives applause or hisses; a member of parliament his cheers, his cries of hear! hear! or possibly disapprobation; the jester knows the effect of his jest by the laugh that follows it; but the preacher has before him uninterested, passionless countenances. To alter this, I admit, would be difficult. I have often wished that all my congregation had tails, and then, if they were pleased, they could wag them without disturbing the silence of the place or the solemnity of the scene."

This humorous idea is doubtless the writer's legitimate property, but is equally that of a highly-gifted lady now deceased, who communicated it to us several years since. She had conceived it as the groundwork of a fairy story, and dwelt particularly on the ludicrous contrast which, when people heard of the misfortunes of their neighbours, would generally be observed between the solemnity of their faces and the vivacity of their tails.

As we have seen this work described as a contribution to the low "sensation-literature" of the day, it may be proper to remark that the censure thus conveyed is, in our opinion, totally unfounded. Nothing in the book is more worthy of praise than the author's moderation and scrupulous abstinence from the banquet of horrors he might so easily have provided. Though he does not abstain from exhibiting the ludicrous side of insanity, there is melancholy in his mirth, and his volume does not contain a word inconsistent with true humanity and deep sympathy with the most tragical of all human afflictions.

"SUBTLE BRAINS AND LISSOM FINGERS."

Subtle Brains and Lissom Fingers: Being some of the Chisel-marks of our Industrial and Scientific Progress. And other Papers. By Andrew Wynter, M.D., M.R.C.P., Lond. (Hardwicke.)

IN an apologetic address to his readers, Dr. Wynter tells us that, the majority of these papers having already appeared in the pages of *Once a Week* and the *London Review*, he is

half afraid that the public have had enough of them, and that he has only been tempted to reprint them by the representations of his publisher. In answer to this, we can only say that the publisher is likely to receive thanks from many quarters for causing the existence of a volume of such varied and charming reading as the papers make when collected. It is a fact well known to every paterfamilias who is in the habit, when the day's labours are completed, of drawing round him his young brood with the laudable intention to instruct or to amuse, that the cry is not for a new chapter of the world's history, or for an entirely original narrative, but again and again for the old stories, the old wonders, and the well-known song—till, finding himself booked once more for "Blue Beard," "Chevy Chase," or "Cinderella," he only forgets his disappointed ambition when the lit-up faces of his audience assure him that they at least desire nothing better than what they knew before. His only plan then is gently to insert the new fact or doctrine well sugared with the ancient lore, and to hope that they imbibe the one with the other. This must be done with infinite care and skill, for the young ones are on their guard, and some urchin will trip up the narrator at the first word of innovation, and direct him to proceed as heretofore. Now, Dr. Wynter's book is by no means a book for children; it is a book for all sorts of people. But those "children of larger growth" whom some of the papers may have already entertained in their separate state will not be displeased to meet with them again, bound up with others equally good; while those whom the papers as now collected will reach for the first time, and who like that kind of literature which "blends information with amusement," and aims at popularizing "the latest results of our scientific and industrial progress," will not find much writing of the day better suited to their tastes than Dr. Wynter's. From the point of view of a higher criticism, indeed, it may be objected that the information given on many of the topics treated is not so thorough and exact as it might be, and also that the book throughout runs over with an excess of a sentiment of which we are beginning to be tired—the sentiment of exultation "in our own enlightened age," "our age of progress," with its railroads, cheap dining-rooms, marvellous manufactures, huge advertisements, colossal hotels, gigantic public libraries, and so forth. But, if Dr. Wynter gossips and chats about his subjects rather than exhausts them, this is in the very nature of his intention; and, if there is too much encouragement in his book to the aforesaid sentiment, it is mixed with a good deal that may be corrective. Thus Dr. Wynter has evidently something of the historical spirit in him which can delight in the picturesque of the past. He opens his volume with a paper entitled "The Buried Roman City in Britain," in which he seems to turn up antique life with the edge of his spade, and look at it with kindly glance. Again, if he exults in the wonders of the present, he sees still greater wonders coming, and dwells on these sufficiently to abate somewhat our conceit in the present. Lastly, there is a dash of the humorous in his papers which helps to keep all right.

Some of the papers are on subjects such as naturally fall within the range of a medical man's experience. Among these may be noted "A Day with the Coroner," "Vivisection," "Village Hospitals," "Physical Education," "Doctors' Stuff," "Small-pox in London," and "The Effects of Railway Travelling upon Health." Of Dr. Wynter's views of the right and the wrong in the great vivisection controversy, the following extract will give a notion:—

> In answer to the assertion that no good has ever come of vivisection, it will be sufficient to say that it was the knowledge thereby gained by John Hunter that made him the profound surgeon and physiologist he was. Had he been influenced by the squeamish doctrine set forth by this society, the great reforms in the art of surgery which date from the time of his teaching and writing would not yet, in all probability, have been accomplished. The vast service he performed for humanity in discovering the means of obliterating aneurisms in the human frame would alone be sufficient to confute those who deny the value of vivisection; and, in our opinion, the destruction of a whole hecatomb of dogs would not weigh in the balance against the value of that great discovery. But it is in the study of the nervous system that the use of vivisection has been so clearly shown. It may be said without the slightest hesitation that we should have been as ignorant of the true mode of action of that system as were the ancients, had it not been for the labours of Bell and Marshall Hall, both of whom gained all the knowledge with which they have lit up that hitherto dark subject out of the bodies of living animals. Dr. Marshall Hall used to say that the frog was "God's gift to the physiologist;" and there can be no doubt that, unless the highly-organized nervous system of the frog had been made subservient to the uses of man by these philosophers, Medicine would have altogether lacked the mighty impulse they have given to its teaching. Dr. Brown-Séquard, again, is worthily following in their footsteps, and by the legitimate use of animal life is clearing up the difficulties they have left unravelled. To deny the rabbit, or the frog, or the dog, to such men as these, would be equivalent to denying the violin to a Paganini, or the brush to a Maclise, or the pen to a Carlyle; it is the tool with which they work, and without which their subtle intellect would have been given to them in vain. To confound labours such as theirs with the snug conceit of the paid lecturer, who bids a gaping crowd watch the agonies of an expiring mouse under the exhausted receiver of an air-pump, is, in our opinion, simple impertinence. There is the cruel process of crimping cod and salmon—"that is vivisection," cried Dr. Tunstall of Bath. Just so, and a very cruel process it is, and we think the benevolent Doctor would be quite justified in getting up an "Anti-Crimping-Salmon Society;" nay, he would be equally justified in directing the energies of sympathizing friends against the skinning of eels; but, in the name of common sense, we must protest against the lumping of acts such as these with the scientific and definite interrogations put to Nature by trained philosophers—by means of vivisection. Surely the Society for the Prevention of Cruelty to Animals has not so far exhausted all the fields of labour open to it as to justify its making this senseless crusade against the means of furthering the aims of science. To rush to the rescue of a frog, lying senseless and painless in the hands of a physiologist, whilst we shut our eyes to the rush of man and horse and dog after the poor hare or fox, is certainly to strain at a gnat and swallow a camel.

On the subject of "The Effects of Railway Travelling upon Health" Dr. Wynter thus sums up:—

> As railway travelling is at present conducted, we cannot in the least doubt that the use of daily season-tickets for such lengths as between London and Brighton is a gross violation of the laws of health, and that those who use them, in the majority of cases, are riding to their own destruction. We are given to understand that people are finding this out, and that a great decrease in the issue of long-journey season-tickets is the result. But we cannot help thinking that, as regards short suburban journeys, the gain is entirely on the side of the new method of transit. We are now speaking of those who can afford to ride in first-class padded carriages; second-class riders must suffer if they have to perform their journeys in mere wooden boxes, made as uncomfortable as possible, apparently on principle. Since the injurious nature of these unstuffed carriages has been demonstrated, we think directors should be forced to fit them up in a better manner. The advantages of transporting our toiling population from crowded cities to the good air of the country are immeasurably greater than the evil done by the half-hour's journey, performed at low velocities, which is sufficient to reach the most secluded and healthy country district.

Among the papers on subjects of popular science, recent mechanical inventions, and industrial improvements, is one called "Silver Town," in which Dr. Wynter traces the history of the juice of the rubber-tree, from the first piece of india-rubber sold in 1770 by Mr. Maine, mathematical-instrument maker, opposite the Royal Exchange, at 3s. for a cubical piece of half-an-inch, to the beautiful ebonite or hard india-rubber manufactured by Messrs. Silver in their little model manufacturing village at North Woolwich. Other papers of the same class are those entitled "The Restoration of our Soil," "The Under-Sea Railroad," "Half-Hours at the Kensington Museum," "The Clerk of the Weather," "Air Traction," "Messages under the Sea," "Town Telegraphs." Here is an extract from the paper on the Kensington Museum:

> Another great element of our present civilization is beginning to make signs of its existence in this museum. We allude to the electric telegraph. Bakewell's copying machine is one of the most interesting of this class, as it brings before the public eye the means that can be employed to write with a pen thousands of miles in length. If the Atlantic cable were in working order, for instance, a man through its instrumentality could sit down to write a letter in London, and feel certain that a facsimile of his handwriting was at the same moment coming out of the telegraph office at New York! The manner in which this astounding machine works is as follows:—The message is originally written on a conducting material, such as tinfoil, with resin or some non-conducting ink. Over the face of this letter, which is placed on a cylinder, a point of metal revolves—this point is in connexion with the conducting wire; at New York, say, a piece of chemically prepared paper is placed on a like cylinder to receive the message; both cylinders are made to move round by clockwork. As the point at this end of the wire passes over the non-conducting resin writing, no current passes; hence the point which moves synonymously with it at New York does not change the colour of the paper, but all the other surface of the writing tablet being a conductor, the currents pass and deepen its colour by chemical action on the far-distant recording tablet. The receiver thus obtains a perfect facsimile of his correspondent's handwriting done in white upon a blue ground. Specimens of this electrical handwriting are placed beside the telegraphic machine, and afford an admirable example of the caligraphy of the lightning-pen.

Among the papers that may be called general or miscellaneous are "The Buried Roman City in Britain," already mentioned, "Dining-Rooms for the Working Classes," "Advertising," "The English in Paris" (a plucky defence of our national manners against the caricaturists), "The New Hotel System," "The *Times* Newspaper of 1798," "Mudie's Circulating Library," "Fraudulent Trade-Marks," "Illuminations," "On Taking a House," &c. It is in this class of papers that Dr. Wynter's sketchiness and want of thoroughness will be most felt; but they are amongst the most readable of the papers nevertheless—the very things for the after-dinner reading of a fatigued person who *must*, from habit, be reading something. Here are some passages from the description of the great new London hotel, the Grosvenor:—

> A fastidious taste may perhaps think the building somewhat overdressed; but there can be no dispute about the enormous amount of labour spent in its enrichment, or respecting the imposing appearance of the pile, with its "stories without end" which the giddy head refuses to count. The richness of its exterior far surpasses the Louvre Hotel, from which it totally differs as regards construction. From the open nature of its site it is lit almost wholly from without, whilst the model Parisian hotel, jammed in between tall houses, was constrained to adopt the interior-court system, which, together with some advantages, on the whole contrasts unfavourably with the design of our great metropolitan hotel. The disadvantages are patent the first moment we enter the doors of the Grosvenor. Although we enter a noble hall, from which marble flights of stairs ascend with almost regal dignity and amplitude, yet we must confess that we miss the exquisite grace which greets the stranger as he drives into the crystal courtyard of the Louvre. We miss the tropical verdure and the trophies of flowers which adorn the grand court, the Oriental palms on the balustraded stairs, through which fair faces gleam and bright eyes glisten from the open windows of the gilded soloon as the bell announces the arrival of strangers. By night, again, we miss the bright *café*, the brilliantly illuminated offices, and the fringe of guests smoking and clareting, and clattering *petits verres*, whilst ladies take ices and demurely quiz; we miss, also, the *salle-à-manger*, which rivals the finest rooms of the Louvre palace in gilding, in rich mouldings, and in its painted ceilings. But in all the true substantialities of an hotel, in the comfort

of its arrangements, in the light of its apartments, and in its cooking, and last, but not least, in its moderate charges, the Grosvenor may challenge comparison with its Parisian rival. When we speak of rivalling, however, we only refer to management and arrangements, as no London hotel yet constructed can bear comparison either with the Hôtel Grand or Louvre in magnitude. For instance, the Grosvenor makes up only 180 beds, whilst the Louvre can accommodate 500 guests, and its sister hotel an equal number, we believe. Whilst, however, Paris can sustain only two of these gigantic caravan-serais, London will, in a short time, possess at least a dozen of the more moderate-sized railway hotels, of which we take the Grosvenor as a type. . . . If you wish, good traveller, to spend but moderately, and you are therefore told that you must mount to the third flight, your mind and your legs also will be relieved at being invited to enter the ascending-room. At the Louvre you sigh as you see your heavy luggage taken up by the "lift," and wonder why humanity should be treated worse than trunks and portmanteaus. But "they manage these things" better at the Grosvenor—at least as far as the traveller is concerned, for he steps into a room, throws himself on a lounging sofa, and, lo! he is in a trice on the third floor. Meanwhile, the porter is constrained to carry his own load and that of the traveller up the long and wearisome flights of stairs—an error this, but one which the traveller will at least contrast favourably with the arrangements of his Parisian hosts. When we consider the waste of human muscles that a few gallons of water scientifically applied can save, we wonder that these convenient ascending-rooms were not in public use long ago. One hundred and twenty gallons of water is sufficient to work the hydraulic apparatus by which the room, with its complement of seven inmates, can be lifted, say 120 feet, which, at fivepence a thousand gallons, makes the cost a little more than a halfpenny. . . One is astonished abroad to find the keys of every guest hanging in the hall of the hotel on a black board opposite the number of his bedroom; and one is more astonished to find that the clumsy, ill-wrought keys are all alike, and that it is the easiest thing possible either to take your neighbour's key when he is out—and you may be certain he is out by the fact of his key being on the peg—or else to use your own key to enter any apartment whose lock it will fit. When the Grosvenor was opened the foreign system was adopted, in so far as hanging the keys openly in the "service," and the result was that different rooms were entered and robbed, by the facilities thus given, to the extent of £500. If this had gone on it would have ruined the hotel. Mr. Hobbs was therefore called in; the doors were altered so as to open from the inside only by the handle, and from the outside by the patent key; consequently, if a guest should leave his key on the mantelpiece, and slam the door behind him, the master-key of the manager would be his only means of obtaining ingress. If he took his key he would leave it at the service, not open, as abroad, but in a frame specially fitted up to receive it, and fastened with a patent lock, the key of which is retained in the possession of the head chambermaid. By this arrangement surreptitious entry into any guest's room is impossible, and since its adoption robberies have altogether ceased. . . . The ground floor is devoted wholly to the public rooms; the dining-room is perhaps one of the most cheerful apartments in London. Unlike the dark *salle-à-manger* of the Louvre, which is lit by a borrowed light from the interior, its windows look out upon the stream of life for ever flowing to and from the Victoria station. No attempt has been made to introduce the *table d'hôte* dinner, as it has been proved over and over again that it is not suited to the tastes of Englishmen. Your Briton has no objection to make one of the three or four hundred guests who quiz each other in foreign hotels, or even at English watering-places; but we decline to depart from our habits of reserve in our own great cities. If any person could have successfully established a *table d'hôte* dinner in London, Mr. Verey was the man; but he made the attempt, and failed, some years ago, and it has never been tried a second time, at least for the delectation of first-class Englishmen. Since the breaking up of the pew system, if we may so term the high boxes which of old partitioned guests from each other, isolated tables to hold four persons seem to be the fashion, and these at the dinner-hour are generally well filled with guests, attracted by the very good cooking and the admirable manner in which the table and dinner is served.

A few poems at the end of the volume are written in a hearty, simple, and somewhat pensive spirit. This, from "A Garden Scene," is pretty:—

> How the great sun is shining on the slope
> Of strawberry-roots! Ah! there's my pet,
> Running her white hands under the cool leaves,
> Diving for the red fruit tassels. I'd have
> Some painter now to catch her eager look,
> Arch brows and lips out-blushed by berry juice;
> And just that glint of gold athwart her brow,
> Let through the rent in her broad summer hat,
> That droops as languid as a poppy-flower
> On her sunned shoulders.

Altogether, "Subtle Brains and Lissom Fingers" is about the pleasantest book of short collected papers of chit-chat "blending information with amusement," and not over-taxing the attention or the intelligence, that we have seen for a good while.

NEW HOLLAND.

Neu Holland in Europa. Ein Vortrag, gehalten im Ständhause im Winter des Jahres 1861, von Dr. F. Unger. (Wien: Braunmüller.)

J. M'Douall Stuart's Explorations across the Continent of Australia. With Charts. 1861-62. Melbourne: Baillière.)

M'Kinlay's Journal of Exploration in the Interior of Australia. (Burke's Relief Expedition.) With Three Maps. (Melbourne: Baillière.)

Journal of Landsborough's Expedition from Carpentaria in Search of Burke and Wills. With a Map showing his Route. (Melbourne: Baillière.)

NEW Holland and Europe—what a contrast! The one, a large island in the uttermost corner of the earth, containing thousands of miles of unexplored country, and an indigenous population scarcely removed in their mode of life from the brute creation; the other, an integral part of a much intersected, yet still connected, continent, thoroughly examined and mapped out, and inhabited by a race for ages at the head of civilization and science. Yet, far as the two are removed geographically from each other, mutual antipodes though they be, it is, nevertheless, almost proved that the continent of Australia exercised in prehistoric periods a decided influence upon that of Europe, and, paradoxical as it may sound, contributed to make it what it at present is. Some time ago Mr. Wallace read at the Geographical Society an interesting paper on the connexion of New Holland with the adjacent islands, showing where, in the labyrinth of the Indian Archipelago, north and north-east of New Holland, the Asiatic fauna commenced and the Australian ended, the leading ideas of which were, however, anticipated and treated more comprehensively by Dr. Unger, the famous professor of botany and palæontology at Vienna, in a popular lecture, delivered in the winter of 1861, under the title of "New Holland in Europe." This lecture, illustrated by woodcuts and nature-printing, is little known in this country, though it has caused an interest of no common order on the continent. Dr. Unger has previously accounted for the existence of American types of vegetation in the Miocene period of Europe, by assuming that, as the sea proves an effectual barrier against the spread of the bulk of plants, a direct continental connexion existed between North America and Europe, by which the migration of the different species could be effected. He has convincingly shown that no hypothesis as yet advanced so fully accommodates itself to the ascertained facts as the one he advocates. Indeed, he does not hold with those who regard the existence of the great island of Atlantis as fabulous, or Plato's discourses on the subject as mere legendary gossip; and we recommend his "Submerged Island of Atlantis," published at Vienna, to those for whom speculations of this nature have interest. In his "New Holland in Europe," Dr. Unger endeavours to account for the existence of the vast number of New Holland types of vegetation in Eocene beds of Europe in an equally ingenious manner.

Who does not know that New Holland and the neighbouring islands are characterized by a vegetation which we seek in vain in other parts of the earth? Many natural orders and a few genera of plants are there found in such overwhelming majorities that the vegetation derives from them its distinguishing character. There are, amongst others, certain myrtaceous plants—*Eucalypti*, or gum-trees—diffused over New Holland in such numerous species, and the species represented by such innumerable individuals, that they alone determine the features and condition of the forests. The same remark applies to a countless multitude of heath-like plants, the *Epacrids*, which are to New Holland what the *Ericas* are to the Cape of Good Hope. The peculiarity of these trees and shrubs, and their abundance, have led botanical geographers to give the name of the region of gum-trees and *Epacrids* to the extra-tropical part of New Holland. But these are not the only types characteristic of this quarter of the globe: the *Proteaceæ*, the *Sandal*-woods, the *Monimiaceæ* and *Anthroboleæ* are equally prominent. True, some of them have sent outposts to other continents; but their principal army is stationed in New Holland and the adjacent islands: the *Proteaceæ*, especially, are spread in numerous genera and species over the whole continent. Nor must we omit to mention as characteristic of New Holland several genera of *Leguminosæ* and *Coniferæ*. There are also the *Acacias*, with numerous species, and curious enlarged leaf-staks peculiar to the Australian types; and, amongst the *Coniferæ*, the genera *Araucaria*, *Podocarpus*, and partly *Callitris*.

Let us now see how far these characteristic plants of New Holland are represented in our European Eocene formation. Not only do we meet with several fragments of the polymorphous order of the myrtles, but it is plain the genus *Eucalyptus* itself is represented amongst the fossils. Of several species, the peculiar leaves, as well as the fruit, have been found. The same is the case with the *Epacrids*, although as yet only a single leaf furnishes evidence of the former existence of this now widely-diffused natural order. But much more stress has been laid upon the *Proteaceæ* as the characteristic plants of the Eocene period than the myrtles and *Epacrids*. We have found of them differently-formed leaves, fruit, and seed, and are in a position to make out even certain genera, such as *Banksia*, *Dryandra*, *Hakea*, *Embothrium*, *Grevillea*, *Lomatia*, *Persoonia*, *Petrophyllum*, &c. It would appear thus that the *Proteaceæ*, now constituting a principal part of the peculiar scrub-vegetation of New Holland, played a similar *rôle* during a former geological epoch of Europe. Greater stress has, however, to be laid—because the character of New Holland and the Southern Hemisphere is more especially determined by them—upon the presence of certain members of the natural order *Santalaceæ*, *Anthoboleæ*, and the allied *Monimiaceæ*. I allude particularly to the genus *Leptomeria*, of which several species, easily recognisable, have been discovered at Häring in the Tyrol, and in the anthracite deposits of the lower Rhine. Closely related to these leafless shrubs is the Australian cherry (*Exocarpus*), which, wonderful to mention, is found amongst the fossils at Nadoboj. Nor must we omit to enumerate the genus *Laurelia*, which belongs to New Zealand and the mountains of southern Chili, and of which we possess highly characteristic fragments. All these fragments, imperfect though they be, make it evident that the flora of the Eocene period bore the characteristic features of the present Australian vegetation. But what am I to add about the *Coniferæ*, *Cupuliferæ*, *Casuarineæ*, *Araliaceæ*, *Leguminosæ*, &c. Amongst the most widely diffused fossils of Sotzka and Häring are the branches of a coniferous plant which has its exact counterfeit in the genus *Araucaria*; and *Araucaria*, as is well known, belongs exclusively to the Southern Hemisphere, New Holland, and Norfolk Island, possessing three [five] species. *Podocarpus*, *Libocedrus*, and *Callitris* may also be named as natives of the same hemisphere, and fragments of them are found in nearly all localities of the Eocene formation. Who does not know the *Casuarineæ* of our greenhouses, and that those leafless, Equisetum-like, shadeless, and weeping trees, are almost exclusively met with in New Holland? They also seem to have been represented in pre-historic ages, although every doubt respecting their former existence is not yet removed. It is worthy of remark that, amongst the numerous fossil-oaks of the Eocene period, there is one with the type peculiar to the Javanese ones of the existing vegetation. and that the dwarf beeches of Tierra del Fuego, Chili, Van Diemen's Land, &c., of the present day probably also existed formerly. I could cite many more instances; but I will content myself with

casting a look upon the widely-diffused and polymorphous class of *Leguminosæ*. As is well known, it is divided into several tribes, every one of which, prefering a certain climate, has selected this or that country as its principle dwelling-place. Amongst those with pea-flowers the *Dalbergieæ* and *Cæsalpineæ* are only met with in the tropics; the *Mimoseæ* form a considerable portion of the tree-vegetation of New Holland. Amongst the fossils of the Eocene formation, we have corresponding with them the genera *Pterocarpus, Drepanocarpus, Centrolobium, Dalbergia, Cassia, Cæsalpinia, Bauhinia, Copaifera, Entada, Acacia, Mimosa*, and *Inga — Acacia* being perhaps most numerously represented.

From these facts Dr. Unger argues that, during the Eocene period, Europe must have had a climate similar to that of New Holland at the present day to enable a similar vegetation to grow there, and that there existed a continental connexion between these two continents, the Moluccas, and the various Polynesian Islands. We have no space to enter into the facts by which this great palæontologist supports his opinion; but we will add his conclusion :—

"Australia must not, on account of its isolated geographical position, strange productions, curious physical character, and the low degree of development attained by its flora and fauna, be regarded as a new, hardly-born island, but, on the contrary, as an aging country, which from time immemorial has endeavoured to retain its character unchanged. New Holland may be likened to an old man, rather than to a child; it does not begin to breathe and to live; on the contrary, it has lived and toiled, and is tottering towards the grave. This is indicated, not only in its flora and fauna, but also in the geological peculiarities of the country. None of the newer formations, so widely diffused over Europe, cover its extensive primitive rocks; and its older deposits, principally consisting of layers of carboniferous sandstone and porphyr, are horizontal and undisturbed. No revolutions have visited the surface since it rose from the ocean; and for that reason the greater portion of the country still looks most like the bottom of the sea. On the other hand, there is a phenomenon plainly indicating that the country has done playing its part, and must now prepare for vast changes. The whole of New Holland is surrounded by coral reefs, those buildings of sinister Najados, which slowly but surely drag their victims to their watery habitation. It is known that these reef-building corals grow only in considerable masses where the ground is gradually sinking. If there were no other sign, these coral-banks surrounding the continent and islands would point to changes in the level; and, from what the smaller Polynesian islands already have undergone, the future of New Holland—viz., a dissolution of the continent into groups of islands —might be predicted. But the entire condition of the country, the desert-like character of the interior, the great number of salt-lakes, the rivers terminating in swamps, &c., indicate an approaching geological change, which, however—let the settlers take comfort—may not take place for some thousands of years. However, this much is certain—New Holland has done playing its part in the physical history of the world."

Three of the other works placed at the head of our notice contain the official reports, illustrated by track-charts, of the latest explorations across the Australian continent, with which the public is already familiar. They are evidently intended for the use of those settlers who, taking advantage of the new discoveries, are prepared to push their out-posts and sheep-stations into the districts which the enterprise of their fellow-colonists has laid open. So far good; but we should like to see the results of these explorations—of which Australia may feel justly proud—placed before the public in a more becoming dress than that in which they now appear. Surely the different governments of the colonies might apply their money to a worse purpose than to aiding some enterprising publisher in bringing out standard editions of the great Australian journeys of exploration and discovery to replace the hasty reprints of official reports.

We have said that Australia contains yet thousands of miles of unexplored country; but nothing more forcibly impresses us with the vast progress made in filling up the gap in our knowledge than a comparison of the map of New Holland of twenty years ago with that of 1863. In 1843 we knew but the coast-line of that continent; now the whole of the western side has been traversed, almost the very centre of New Holland has been reached, and successful journeys have been made from the southern to the northern coast, right across the country, while the labours of Leichhardt, Kennedy, Landsborough, Mitchell, Walker, and other enterprising men have honeycombed, as it were, the entire eastern shores, and dotted our maps with rivers and lakes, deserts and rich pasture-lands, forests and swamps. All honour to these hardy pioneers! They have laid the foundation for many a happy home; and future generations will preserve as household words the names of the great explorers who have imprinted their names in such indelible letters in the history of Australia.

FOOD IN LANCASHIRE.

Public Health. Fifth Report of the Medical Officer of the Privy Council, with Appendix. (The Queen's Printers.)

IN December last Dr. Edward Smith was requested by the Privy Council to visit the principal towns in the cotton districts, and to draw up a report in answer to the following questions :—

1. What is the least cost per head per week for which food can be bought in such quantity and in such quality as will avert starvation diseases from the unemployed population?

2. What, with special reference to health, would be the most useful expenditure of a weekly minimum allowance granted exclusively for the purchase of food?

3. What, with the same special reference, would be the most useful expenditure of small additional sums, say 25 and 50 per cent. on the minimum granted for the same exclusive purpose?

The Appendix to the Medical Officer's Report for 1862 contains the result of his inquiries.

Dr. Smith begins by some remarks on the ordinary habits of the manufacturing population. The amount which they were accustomed, before the cotton famine, to spend on food has been, he thinks, exaggerated. Indeed, it was hardly equal to what might have been expected from the amount of their earnings. In some instances which he quotes, ten single persons spent, on an average, 5s. 4d. a week each, the largest outlay being 6s. 7d. Nine families spent 2s. 11d. per head weekly, the highest sum being 5s. 1d. per head. The quantity of meat and milk consumed was disproportionately small when compared with the quantity of bread, butter, and sugar. In one family, consisting of a man and wife and seven children, with a weekly income of £2. 11s. 8d., the quantities consumed per week were 9lbs. of meal, including bacon and 2 pints of milk, against 109lbs. of bread, 6lbs. of sugar, and 5lbs. of butter. Tea and coffee were drunk, in large quantities, two or three times a-day. The amount of physical labour undergone by the operatives is about the same as formerly, though now, in many instances, it takes the form of wandering about the streets; and the increased exercise in the open air has tended to improve the general health, and to promote more complete assimilation of the food actually taken; thus in some measure compensating for the diminished quantity. This diminution has, of course, been very great. The ten single persons and nine families, mentioned before, now spend 2s. 5d. and 1s. 10d. a-week in food, instead of 5s. 4d. and 2s. 11d. Still, Dr. Smith gives it as his general impression that "a fair average state of health has been maintained" upon these allowances; and he mentions as typical instances two girls, twenty and seventeen years of age, with weekly incomes of 3s. each, who have supported themselves for 1s. 9d. and 2s. 0¾d. respectively. The weekly dietary of the former consists of 12lbs. of bread, ½lb. of treacle, ¼lb. of bacon, 3 herrings, and 1oz. of coffee. The latter has 8lbs. of bread, 1½lb. of oatmeal, 1lb. of treacle, ½lb. of bacon, ½lb. of meat, 2 pints of skimmed milk, and 1oz. of coffee, being "the best arranged dietary which I have met with."

From the general appearance of persons living upon this reduced dietary, and a knowledge of the daily waste of the carbonaceous and nitrogenous elements of the human body as determined by actual experiment, Dr. Smith proceeds to frame his answer to the first question. Where food is purchased, and cooked at home, he is of opinion that, in the case of single persons living separately, or of a man and wife without children living with them, the lowest amount to be spent weekly in food should be 2s. 6d. for men and 2s. 3d. for women. In the case of families, the lowest allowance should be 4s. 6d. to the husband and wife, 2s. to each child over twelve years of age, and 1s. 6d. to all others. Where food is prepared in large quantities, and supplied at cost price, the weekly allowance may be reduced to 2s. for each person over sixteen, 1s. 6d. for each person over ten, and 1s. 3d. for each person under ten; and it is "probable that the food thus supplied would be more nutritious in quality, better cooked, and eaten hotter than under a system of separate cooking."

The next point to be considered is how can this allowance be most advantageously laid out? In answering this question Dr. Smith first lays down some general principles. The object being to maintain health on the least quantity of food, much fluid should not be taken, as excess of fluid causes an excess both of vital action and waste. Two and a half pints should be the ordinary daily maximum for an adult. Variety from day to day, at least in the dinner, is very important, both to promote the assimilation of the food and to keep up a relish for it; but these ends may be secured by a change in the modes of cooking and by variation of flavour, as well perhaps as by a change in the articles of food. Spices and dried herbs, therefore, may be made very useful. It is highly desirable that the food should be eaten hot. Animal food must be given in some form, whether as milk, eggs, or flesh—but not salt meat. There should be a proportion of fresh vegetables, though the necessity for this element in a dietary has been, in Dr. Smith's opinion, somewhat overrated. Fat, though dear in proportion to its nutritive value, must still be given in small quantities. Food should be taken early in the day—a good breakfast and a good early dinner being all that is, strictly speaking, necessary; but it is so important not to attempt any change in the habits of the people, in the present emergency, that all schemes of dietary should provide for three meals a day. For the same reason, the use of tea and coffee must be continued, though they are not economical foods. The proportion of carbon and nitrogen taken during the day should be, for men, 4300 grains of carbon, and 200 grains of nitrogen, and Dr. Smith recommends their distribution over the day as follows :—

MEAL.	CARBON.	NITROGEN.
	grains.	*grains.*
Breakfast	1500	70
Dinner	1800	90
Tea	1000	40

The next step is to compare the economic and nutritive value of different kinds of food :—

	CARBON.	NITROGEN.
	grains.	*grains.*
1 lb. of bread contains .	1968	92
1 lb. of flour „ .	2656	120
1 lb. of oatmeal „ .	2768	140
1 lb. of peas „ .	2688	252
1 lb. of rice „ .	2688	70

The price of all five kinds of food is about the same; so that oatmeal and peas would both be much cheaper than bread, if they

were equally well digested. This, however, is not the case, and the flavour of peas soon becomes wearisome to the palate. But they are of great value as adjuncts. Rice must be accompanied by other more nitrogenous food, and its use might then be extended with advantage. Potatoes are a very dear food, three and a half pounds giving only the same quantity of carbon, and five pounds only the same quantity of nitrogen, as one pound of flour. Of animal foods, the comparative nourishment is as follows:—

	CARBON.	NITROGEN.
	grains.	*grains.*
1 lb. of meat contains .	2580	160
1 lb. of bacon „ .	4753	96
1 lb. of liver „ .	1226	210
1 lb. of herrings (dry) contains . . .	1435	840

Bacon is by far the cheapest form in which fat can be given. Herrings can be bought for about twopence-halfpenny per pound; and both, from their low price and the great proportion of nitrogen they contain, would be the cheapest animal food, if they were more completely assimilated into the system:—

	CARBON.	NITROGEN.
	grains.	*grains.*
1 pint of milk, new, contains . . .	546	43
1 pint of milk, skimmed, contains . . .	438	43
1 pint of buttermilk contains . . .	420	43

As skimmed milk differs from new milk only in the absence of fat, and buttermilk from skimmed milk only in containing rather more acid and rather less sugar, both these should be used in preference to new milk. If half-an-ounce of mutton fat be added, and, in the case of buttermilk, a little flour and spice as well, they may be made equal in nutritive value to new milk, at much less cost. Cheese contains 2657 grains of carbon and 316 of nitrogen to the pound; but "there is reason to doubt if a large quantity of it is digested." Sugar affords no nitrogen, and, compared with its cost, its nutritive value is very small. Treacle is nearly as nourishing, and a great deal cheaper.

The answer to the second question proposed is given in the shape of a series of model dietaries. The object is to provide three meals a day, containing in all 4300 grains of carbon and 200 of nitrogen (or, for women, one-tenth less), distributed as above, at a total maximum cost of 4½d. per day. For food for separate persons, cooked at home, Dr. Smith gives twenty-eight formulæ—ten for breakfast, at a cost of 1d. to 1½d.; thirteen for dinner, at a cost of 1½d. to 2d.; and five for tea, at a cost of 1d. Those for breakfast include—Milk-porridge; milk-porridge and bacon; oatmeal-brose, with or without bread, and bacon; rice, milk, and bread, with or without bacon; tea or coffee, and bread-and-butter; coffee and bread, and bacon. Those for dinner include—Suet-pudding, with bread and cheese; meat-pudding and bread; liver-pudding and bread; potato-pie; liver and bacon, with pease-pudding and bread and cheese; fresh meat and potatoes, with bread and cheese; Irish stew and bread; bacon, vegetables, and cheese; rice-pudding, with bread and cheese; herrings and potatoes, with bread, or hasty-pudding. Those for tea include—Tea or coffee, and bread-and-butter; oatmeal-pudding and treacle; bacon and bread. Besides this there are formulæ for ox-head, pea and milk soups, to be provided at public kitchens, each costing, with six ounces of bread, 1⅛d. to 1¾d. per ration, and giving, with the bread, the required nourishment for the dinner. A series of weekly dietaries is also given; but they "are less valuable than those for single meals, from variety of tastes and habits of the people." In these "the weekly cost varies from 1s. 11¾d. to 2s. 7½d. under Question 2, and from 2s. 8d. to 4s. under Question 3." But on this latter point we may give Dr. Smith's own words:—

It is not necessary to enter at any length into the answer to Question 3. It may suffice to state that such additional dietaries would be especially applicable to persons of large stature, to the sick, and to the aged. The former would demand a larger amount of bread and meat, while the sick and aged would need a larger proportion of the luxuries or comforts of foods. To the latter, therefore, a larger addition of tea, coffee, butter, and perhaps meat, might be allowed; and the articles should be of better flavour and quality—as, for example, new milk and fresh butter. The dietary for the sick is a subject of the gravest interest, and calls for early and careful attention.

D. C. L.

"BETTER DAYS FOR WORKING PEOPLE."

Better Days for Working People. By the Rev. William G. Blaikie, A.M., F.R.S.E. (Strahan & Co.)

THE autumn days close in apace, the crimson berries are on the yew, the junipers purpling on the downs; and, as you glance over the eyebright starring the grass at your feet, across the long shadows on the meads, to the lines of trees filling the hollows of the chalk range beyond, all under a glorious sky, you feel how fairer far the view must be than when the marine plants and corals, plesiosaurs and pterodactyles, dwelt in the land and sea: and yet you trust that there is some higher creature than yourself to come hereafter and people this globe, and that the new heaven and the new earth, with their inhabitants, will as far surpass the present as that which is has gone beyond that which was. So it is with those who look at the Condition-of-England question now. Turning back even only five hundred and sixty years, and seeing how one who, like Roberd of Brunne, handled the sins of his time, had to rebuke lords for carrying off poor men's wives and daughters to their castles and then making a joke of it, and to exhort rich men to give their alms without beating and abuse, not keeping the poor shivering all day at their gates in the cold for it—how, later, Chaucer had to preach against the doctrine that "a cherl hath no temporel thing that it nys his lordes," and remind the lords that "thilke that they clepe thralles, ben Goddes poeple, for humble folk ben Cristes frendes; they ben contubernially with the Lord," so that extortions and despite of underlings was "dampnable;"—looking back on this and the thousand other proofs of the hard case the English labourer once was in, we gladly admit that he is better off now than he was; but we as stoutly maintain that his more powerful fellow-countrymen have not done, and are not doing, anything like their duty in helping him up to a share of the comfort and power that they themselves enjoy, and that his present is not the condition in which an English workman should rest. Let Mr. Blaikie state the case:—

But, notwithstanding the undoubted and manifold change for the better in the condition of the British workman, the improvement is not so great as might have been looked for. . . . . It is within the last two centuries that British workmen have acquired such skill in almost every department; that British manufactures have obtained so high a character, and secured the preference in almost every market; and that British ships, carrying forth our productions to every country in the globe, have poured upon us in return the wealth and merchandise of every clime. Considering these things, it might have been expected that the working classes should have risen to a corresponding place in the social scale. It is an undoubted fact that they have not obtained that place. They have no direct voice as yet in the government of the country; their houses are frequently of a most miserable kind; and it is only within the last few years that attention has been turned to the necessity of so providing for the healthfulness of districts where they cluster, as to prevent their being mowed down in scores and hundreds by the ravages of disease.

What, then, is wanted to put things straight? Mr. Blaikie shies at the political-power remedy, though, of course, that, according to many, is the directest road out of the difficulty. "If you could but have such a new Reform Act," say some, "as would make legislators as careful and solicitous about working men's interests as the old Reform Act has now made them about middle-class interests, you would soon have the main material obstacles to the 'Better Days for Working People,' swept away. No need to wait then for fifteen years to stop the consumption and disease forced on journeymen-bakers by their employers, or, shall we say, 'the custom of the trade;' no need then to witness the repeal of a Coalwhippers Act, and see half a trade consigned to misery and the mercy of nineteen 'undertakers;' no need then to wait till the iniquities of bleach-fields rise to such a pitch that for very shame they must be stopped; no need then to long for an emigration grant, administered by men on the watch, to relieve the surplus-labour trades." Be this as it may, we must wait for any such time as is thus foreshadowed, and ask, with Mr. Blaikie, what is to be done in the meantime? The answer is, *working men must improve themselves*, must look to themselves for the good they want—under Divine guidance and keeping Sunday holy, the Scottish clergyman, of course, adds. Beginning with the *Home*, Mr. Blaikie shows how, by following the Birmingham working men, with their Building Societies and from 8000 to 9000 houses, a man subscribing fifteenpence a fortnight as soon as he is out of his apprenticeship, may in time own his own house. But then, of course, there must be little drinking of yards of land in the shape of pots of beer, and little indulgence in what King James VI. called "so precious a stinke" as that of tobacco. Pointing next to *Co-operation*, our author shows how, by following the Equitable Pioneers, or working men of Rochdale, in their co-operative shop, doing about £4000 a week, a man may save the ordinary middlemen's profit on his purchases, and thus, without effort, accumulate capital. Turning to *Friendly Societies*, *Deferred Annuities*, and *Life Assurance*, the author points out the advantages of these plans, and is urgent on the duty of working men and boys availing themselves of the facilities offered by Savings' Banks to lay by their earnings. To show that the poorest-paid even can do this, if they will, he quotes the following passage from the letter of a young man published a few years ago in an Edinburgh magazine:—

Arriving at Edinburgh about three years ago, with difficulty, like many strangers, I succeeded in getting a little to do, when an acquaintance suggested the great importance of depositing now and then a few shillings in the Savings' Bank, mentioning what a blessing it would prove to be in the event of sickness or accident. I thought it was foolishness for me to imagine to save any money, when my wages would not average five shillings a week—at other times perhaps not three—never exceeding ten and sixpence. However, I formed a resolution, and made what I thought a great effort, entering the Savings' Bank, for the first time, on the 15th of February, 1844, depositing six shillings. Shortly thereafter I entered service; from which time I had statedly eleven shillings a week, afterwards increased to twelve. Instead of getting my wages on Saturday, I generally got it on Monday, proceeding immediately to the Savings' Bank with a little. . . . About two years and a half soon passed away, till, on the 17th of November, 1846, I became sick, confined to bed, a medical gentleman regularly in attendance twice a day. So far as I remember, there were only a few shillings in my possession at the time, which speedily disappeared. I lay on bed, imagining what I should have done if this pittance were all which I had laid up against the day of sickness, or any other event that might happen; now placed among strangers, some hundred miles from friends, and, it may be, soon thrust out on the mercy of a reckless world, none to care for me; aggravated, no doubt, by the thought of an aged mother living on some bleak mountain's brow, looking for a little assistance from her son, when, to her sad misfortune, the half of her living had been blasted by a visitation from Providence. But, amidst all these perplexing ideas, what consolation I experienced on recalling

to mind that I had laid up in the Savings' Bank the large sum (it appeared so to me) of £21. 5s. 7d. Here is a sufficient supply for me until able to work, also competent to meet the necessities of a tender mother.

Supposing, then, the working man's capital accumulated, what is the first thing to be done with it? Why, to get a decent home.

The late census has brought out the appalling fact that no fewer than a million of the people of Scotland have dwellings of but one apartment, where, obviously, in the case of families, no attempt can be made at a separation of the sexes. Like Mrs. Bayly, we instinctively exclaim, when this fact is brought before us, It is of the Lord's mercies we are not consumed; it is amazing, when we consider the influence for evil of this one arrangement, that virtue and chastity survive at all.

All friends of the poor, whether they hold the religious doctrines of the above-quoted Queen of the Kensington Potteries or not, must acknowledge that she hit the right nail on the head when she preached on Ragged Homes and How to Mend Them. Having got the home, next must come cleanliness (including ventilation); and, to prove that poverty is no bar to it, the report of the Norfolk School-Inspector is quoted, which says:—

One marked and favourable peculiarity, even amongst the poorest Norwich weavers, is their strict attention to cleanliness and decency in their dwellings—a token of self-respect, and a proof of ideas and habits, of which the severest privations in food and dress did not seem to be able to deprive them. Their rooms might be destitute of all the necessary articles of furniture; but the few that remained were clean—the walls and staircase white-washed—the floors carefully swept and washed—the court or alley cleared of everything offensive—the children wearing shoes and stockings, however sorry in kind, and the clothes not ragged, however incongruously patched and darned. "Cleanliness and propriety," said one man, "are, in spite of our poverty, the pride of Norwich people, *who would have nothing to say to dirty neighbours.*"

Then must be ever present *Home-Sunshine*, as Mr. Blaikie calls it, the cheerful, loving spirit of father and mother through the home—not easy, careless indulgence on the one hand, nor discipline of this kind on the other:—

We remember on one occasion speaking to the wife of a working man, whose family was wild and obstreperous, on the duty of keeping up discipline among the children. "That's well done in this house," she replied promptly and emphatically, "their father gives them *awfu' leatherins!*"

Then comes occupation for leisure-time, treated under "*Reading and Recreation;*" and here we are sorry not to see mentioned Captain and Mrs. Bayly's Reading and Club-room, and its follower, the Working Men's Club and Institute Union; as, for young men, the Club is certainly one of their greatest needs, and one of the greatest safeguards against drink, and the ruin it entails. We are not quite pleased either that the only books that Mr. Blaikie thinks it safe to mention, in addition to the Bible, are the "Pilgrim's Progress," "Commentaries" by Collins, Matthew Henry, &c., Josephus, and Burns's "Church History," and the like, with only a reference to Chambers, Spalding, and Collier as guide-books for general literature; while, on what he says on the observance of Sunday, we do not feel called on to comment here, though the writer must know there is another side to the question which he has not fully faced. But to the book as a whole we wish success. The writer has the reputation, we believe, of being one of the most cultivated and thoughtful of the Free Church clergymen of the more liberal school, and, at the same time, one of the most hard-working of the Edinburgh parish-ministers. The influence of the book on all readers must be good; and even those who reject Mr. Blaikie's peculiar views of theology, and of the obligation of the Sabbath, will hardly object to the way in which he puts his argument to working men to care for God or religion. "Try Him and it," he virtually says, "and see whether they don't pay. You can't conduct your trade and other societies because you can't bear and forbear, and do to others as you'd be done by; you can't be good fathers and men because you dont believe in the Good Creator and Father of all, and the Son who represents Him. Then just try this belief, it isn't a gloomy hard servitude, but one of life and love; see whether it won't steady and sober you, support and comfort you, make you happy and true yourselves, and a blessing to all around you."

To any one accustomed to the popular southern notion of the Scotch parson, an acquaintance with Mr. Blaikie will be a most welcome change. There is very little narrowness in his book, but much geniality, quiet good sense, and right feeling. He does not even denounce the workman who said to his companion, "Johnnie, boy, if you set yourself to convert me, I'll break your face;" he allows that, "looking at the general tendency of strikes economically, it must be admitted to be in favour of workmen." He adds, "They make employers more careful not to provoke such a movement; they make them more prompt in giving their workmen the benefit of larger profits in good times; the fact of a possible strike in the background no doubt gives immense force to the workmen's demands." He directs attention especially to the men from eighteen to thirty, showing how then the character is determined for life, and presses the necessity of bringing them under higher influences—making them true Christians, if possible; if not, still enabling them to read better books, enjoy natural scenery, physical science, &c., and so lifting them out of the degrading drunkenness which is the portion of so many. On the education of the young, he says: "One of the most vital parts of education is to train the young to right *feelings*. To get them filled with a love of what is good; to get them to admire what is honest, lovely, and of good report; and to abhor what is false, cruel, or impure—is the great master-stroke in education, which, when successful, makes the rest mere matters of detail." Altogether, the book is a well-intentioned, sensible work, likely to help in bringing sooner to our land "Better Days for Working People."

EARLY ENGLISH POEMS.

Roberd of Brunne's "Handlyng Synne." Edited for the Roxburghe Club. By F. J. Furnivall, M.A. (J. B. Nichols and Sons.)

Early English Poems and Lives of Saints. Edited for the Philological Society. By F. J. Furnivall, M.A. (Berlin: A. Asher & Co.)

English Metrical Homilies, from MSS. of the Fourteenth Century. Edited by John Small, M.A. (Edinburgh: W. Paterson.)

WE are still accumulating valuable materials for the history of our noble language. Our book-clubs and learned societies have done, and some few are still doing, good service in rendering accessible a large collection of early English literature, of which, strange to say, little use has, as yet, been made in the way of illustrating the successive changes which the language of this country has undergone at various times. Thanks to such intelligent writers as Craik and Marsh, the study of our old authors is gradually becoming *popular;* but much remains to be done in order to place the subject upon a *scientific* basis. One has only to glance at the very accurate and, in general, satisfactory investigations of continental philologers, and their success in working out the several periods of the German language and literature, to see how very little has been accomplished for our own literary monuments. But the Germans are methodical; and they have classified and arranged their early literature with regard to age and dialect, while we are unable to point to any work affording trustworthy information upon the date and dialect of our manuscript and printed early literature. No one will be inclined to value lightly the importance of knowing the precise age of a particular manuscript; and we must own that a few writers have shown some anxiety to aim at accuracy in this matter. But, of the dialects once spoken in this country five or six centuries ago, we know, comparatively speaking, nothing. Writers treating of the "history and progress of the English language" seem to have wholly ignored a subject of great interest and importance. They content themselves with talking of the dialectical confusion of certain periods, the want of a standard idiom, and so forth. Hence the conflicting statements with respect to the use and disuse of certain words and inflexions at different periods of our language in its so-called transient state, and the uncertainty attached to such terms as Semi-Saxon, Early English, Middle English, &c.—no two authorities agreeing exactly as to the periods that should be included in these somewhat arbitrary divisions.

For the purpose of showing the importance to be attached to dialectical forms, we will take up that valuable specimen of Old English contained in the proclamation of Henry III. (1258), and addressed to the people of Huntingdonshire. The document is extremely short, but has given rise to much discussion. Craik affirms that it is not a trustworthy and satisfactory example of the language at the date assigned to it; he thinks that it is older than the Ormulum. Marsh, on the other hand, is inclined to accept it as evidence of the state of the language in the middle of the thirteenth century; while others, again, consider it to be Semi-Saxon rather than Old English. The document in question, being addressed to the people of the south *midland* counties, explains at once many of its peculiarities (orthographical and grammatical). So that, keeping the dialect of the proclamation in view, we at once understand the following words, which are thought to be peculiar—*hoaten* (we command), *willen* (we desire), *beon* (are), *senden* (we send). Had it been addressed to the southern folk we should have had in the place of these—*hoteth*, *willeth*, *beoth*, and *sendeth*. The use of *on* for *of* is a well-known Mercian peculiarity, and one that survived in our literature to a very late period. There are in this document some remnants of the Old West Saxon idiom (the dialect of the southern counties), just as we find occasional traces of the Mercian in what are otherwise true and uncorrupted specimens of the Western dialect. The Midland (or Mercian) dialects, at least as early as the latter part of the twelfth century, had adopted a mode of conjugating their verbs more uniform than that employed by the Southern or West Saxon idioms, as may be seen from the following table:—

Indicative Mood, Present Tense, Singular Number—1st person, love; 2nd person, lovest; 3rd person, loveth (Western and Midland).

Plural Number—1st person, loveth; 2nd person, loveth; 3rd person, loveth (Western). 1st person, loven; 2nd person, loven; 3rd person, loven (Midland).

Past Tense, Singular—1st person, loved; 2nd person, lovedest; 3rd person, loved (Western and Midland).

Plural—1st person, loveden; 2nd person, loveden; 3rd person, loveden (Western and Midland).

The verbal inflexions of the Northern or Northumbrian dialect were still more uniform:—

Present Tense (Indicative Mood).

Singular.	Plural.
1st, 2nd, & 3rd persons, loves.	loves.

Past Tense.

1st, 2nd, & 3rd persons, loved.	loved.

A careful perusal of our early literature leads us to the conclusion that, during the thirteenth and fourteenth centuries, there were but three *principal* dialects (each of which claimed the title of English within its own locality)—the Northern (or Northumbrian), the Midland (or Mercian), and the Southern (or West Saxon). There were, doubtless, various branches of each of these idioms, distinguished by minor peculiarities. We find one branch of the Northumbrian *north* of the Tweed (Lowland Scotch), as preserved in the works of Barbour and Wyntoun, and another south of the Tweed,

the peculiarities of which are exhibited in the early English Psalter of the Surtees Society, and Minot's poems, &c. The Kentish (in the works of Dan Michel and William of Shoreham) and the Hampshire (in the romance of Octavian) dialects belong to the West Saxon. And the Lancashire dialect, as preserved in the metrical romances edited by Mr. Robson for the Camden Society, and in the compositions contained in the Sloane MS. 1986, is a branch of the West Midland, strongly influenced by the Northumbrian. Horne Tooke derives *wench* from the verb *wink*—an etymology which has been pronounced to be as correct as Swift's derivation of apothecary from "a pot he carries." There is no doubt that our great etymologist, who had a keen eye for detecting the affinities of words, was right in looking upon *wink* as the original form of *wench;* but, at the same time, he committed a great error in the meaning and grammatical function which he assigns to the root *wink*. The Northern dialect preferred hard and guttural to soft and sibilant sounds. Traces of this are found in modern English. Thus *bench*, *church*, *chest*, *pitch*, *stench*, *thatch*, are true southern, as distinguished from the northern forms, *bink*, *kirk*, *kist*, *pik*, *stink*, *thak*—all in use in the fourteenth century, and still familiar to a north-countryman.

Although we do not actually meet with the hard form *wink* as signifying a youth (boy or girl), we do find the derivatives *winc-le* and *wench-el*, which, of course, require the simpler *wink* and *wench*. So we see that *much* comes from the Anglo-Saxon *micle*—the Northern dialect retaining the guttural *mickel*, and the Southern the softer *muchel*. We at once understand the value of the double forms so frequently to be met with in our early English writers, as *smech* and *smeke* (smoke); *swench* and *swink* (labour); *thench* and *think;* *uch*, *ech*, and *ilk* (each); *swich*, *swuch*, and *swilk* (such); *whuch* and *whilk* (which). Shakespeare has preserved for us the varieties *smatch* and *smack*. Similarly the Old Norse *skrikja* becomes *skrike* in the Northern dialect and *schirch* in the Southern, while we still preserve the double forms (softened) *shriek* and *skreech*.

A little more attention to dialect would be of some assistance to the lexicographer and etymologist. Mr. Wedgwood, the author of the best work on English etymology, incorrectly derives *froward* from *fromward* (Old English, *frommard*). In the Northumbrian, *fraward* signifies froward, from *fra* (Icel., frá), from—the Southern corresponding term being *fram*. The Midland dialect often had occasion to borrow terms from the North; such loans were adopted with some slight change of form; thus, *fra* became *fro*, as in our modern phrase "to and fro" ("to and from"); *bla* (livid) became *blo*, *bloo*, or *blue;* and *fraward* assumed the form of *froward*.

These may be deemed matters of little or no importance; but in philology accuracy only is worth anything. It is generally asserted that the prefix *a* in *afoot*, *aloft*, *aright*, &c., is a corruption or contraction of the Anglo-Saxon *on*. The peasants of Sussex still say *an*, *fram*, and *upan* for *on*, *from*, and *upon*—provincialisms (but not corruptions) as old as the thirteenth century. Before a word commencing with a consonant, *an* (in the Old English of the South) became *a;* thus we have *an urthe* (on the earth), *an eve* (in the evening); but *afure* (on fire), *aland* (on the land), *a summere* (in summer), &c. The Northern dialect employed the prefix *on* or *o* in the same way; hence we find *oloft*, *obaft*, *olive*, *osleep* (on sleep), corresponding to *aloft*, *abaft*, *alive*, *asleep*, which are the usual Southern forms. Some knowledge, then, of our old dialects is not only useful, but absolutely necessary, for the explanation of various forms of grammar and vocabulary still unaccounted for by our grammarians and lexicographers.

Accordingly we attach no little importance to the publication of these early English productions, to which we call the attention of our readers. Without exception, they are all very carefully edited from valuable and early manuscripts. The editors are not wedded to any of those theories which have led so many astray, and have therefore given us texts as valuable for study as the originals themselves. The "Metrical Homilies" contain excellent specimens of the Northumbrian dialect (of a district more northern than York) in the earlier part of the fourteenth century; and some of the poems in the introduction are of the latter part of the thirteenth. Much of the subject-matter is readable; and some of the tales told with a view to enforce Scriptural precepts are extremely curious. We have no space to enter into their philological peculiarities, but select the following lines as a short but fair specimen of the language:—

Til his decipeles said Jesus,
Als Sain Matheu her telles us,
Heven es lic til an husband,
That seu god sed apon his land,
And quen al folc on slep ware,
Than com his fa, and seu right thare
Darnel, that es an ivel wede,
Riht al imang this hosband sede;
And quen this sede, quarof I mene,
Was hey aboven the erthe sene,
Than was thar darnal sen imang,
That thoht this hosband hine ful strang.
Thir hyne said til this hosband,
Seu thou noht god sed on thi land,
Quethen com darnel that es sen,
Imang thi corn nou albiden.
This hosband ansuerd thaim sone
And said, mi fa this ded haves done.
Thai asked him yef he wald thaye
Suld draw it op and do it awaye.
And he ansuerd and said naye,
For suagat spil mi corn ye maye,
Yef ye draw up the darnel smalle,
Ye mai draw up the corn witalle,
Bot lates it til hervest stand,
And I sal say til men scherande
Gaderes the darnel first in bande,
And brennes it opon the land,
And scheres sithen the corn rathe,
And bringes it unto my lathe [barn].

Lates, *gaderes*, &c., are imperatives; the Southern and Midland forms would be *letteth*, *gadereth*, &c.

The "Handlyng Synne," the production of Robert (Manning) of Brunne, exhibits the North Midland dialect (slightly influenced by the Northumbrian) as spoken in the first half of the fourteenth century. A careful attention to its peculiarities will no doubt raise doubts as to the value of Manning's version of Langtoft's Chronicle as evidence of the state of the Lincolnshire dialect. It has been spoken of by Garnett as containing a pretty good sprinkling of Anglian forms. For our own part, taking into consideration the mode in which the old scribes yielded to *local* influences in the transcription of manuscripts, we believe that, while the translation of the Chronicle was originally the production of Robert of Brunne, yet the form in which we now have it must have been the work of a *Northern* scribe, who endeavoured to render Manning's version intelligible to Northumbrian readers.

We may mention that the same work often appears in several dialects, as is the case with Hampole's translation of "Le Miroir du Monde," the "Seven Sages," "Guy of Warwick," &c. The more popular the author, the greater will be the number of forms under which we may expect to meet with his productions.

Considering that the "Handlyng Synne" was written as early as A.D. 1303, and preserved in a MS. not later than 1360, its language strikes us as having a remarkably *modern* look; and we might be justified in supposing that we have only a modernized copy of Manning's work before us, were it not for the fact that the North Midland had changed more rapidly than the Southern dialects, and therefore at an *earlier* period had assumed a modern form. At a very early period we find this dialect throwing off those inflections of adjectives (articles and demonstratives), pronouns and verbs, to which the Southern idioms tenaciously clung. And if, as Marsh suggests, the period of the English language commenced just at that time when the relations of words (and their meanings) were determined not by inflexions, but by position, then we must conclude that Robert of Brunne is the *first* of our early writers who presents us with a fair specimen of that form of English which afterwards became the standard dialect of the country, and the one which Chaucer, Shakespeare, and Milton have successively enriched.

The subject-matter of the "Handlyng Synne" is not unlike that of the "Homilies;" and some few tales are worthy of notice, being probably the compositions of Manning, and not *mere translations*. The editor has added a complete and valuable glossary; but there is just one error we would wish to correct. *Rous* (glossed "proud wordys"), incorrectly explained by *rough*-ness, is merely a variation of the Scotch and North English *ruse*, *rose*—boast, self-praise, a term of Norse origin.

The following "Tale of the Devil's Disappointment with the Jangling [chattering] Women" will give the reader some idea of Robert of Brunne's language:—

An holy man hys messe songe,
And at the messe whan tyme fel
The dekene to rede the gospel,
Yn hys redyng, noun wyst why,
He logh [laughed] a grete lagheter an hy.
The preste, and other that there stode,
Held hym a fole that coude [knew] no gode.
Seththe [afterwards], whan the messe was done,
The preste askede the dekene sone
"Why that he so ferde [fared], and how,
That he yn hys gospel loghe?"
Moche tharfore he gan [did] hym blame,
For the lewede [lay] folk thoghte hyt shame.
The dekene told hym why hyt fel
There to laghe yn hys gospel,—
"As y redde that yche [same] tyde,
Twey wymmen janglede [chattered] there besyde;
Betwex hem to y say [saw] a fende [devil]
Wyth penne and parchemen yn honde,
And wrote alle that ever they spake
Pryvyly behynde here [their] bake.
Whan hys rolle was wryte alle ful,
To drawe hyt oute he gan to pul;
Wyth hys tethe he gan to drawe,
And harde for to tugge and gnawe,
That hys rolle to-braste [burst] and rofe;
And hys hede azens the walle drofe
So harde and so ferly sore.
Whan hys parchemen was no more.
Whan y say that, y let so gode,
Y brast on lagheter there y stode.
That he so moche sorow hadde
As hys wrytyng was alle to-fade [faded away];
And when he parceyvede that y wyste
He al to-drofe hyt wyth hys fyste,
And went awey alle for shame;
Tharfore y loghe and hadde gode game."

The "Early English Poems and Lives of Saints," containing pieces more or less ancient, are excellent types of the Southern or West Saxon dialect during the latter part of the thirteenth and the commencement of the fourteenth century. The Moral Ode is exceedingly valuable in a philological point of view; while the lives of St. Dunstan, St. Swithin, and St. Christopher are really amusing. They are usually ascribed to Robert of Gloucester; and, if the works of that author, we should say, comparing them with the Cottonian MS. of the Chronicle, that they are somewhat modernized. The reader will find towards the close of the volume a transcript, more accurate than any that has yet appeared, of the well-known satirical poem "The Land of Cokaygne." It commences thus:—

Fur in see bi west Spayngne,
Is a lond ihote [called] Cokaygne.

There is, we are told, no land under heaven to be compared with it for goodness.

Though paradise be merry and bright,
Cokaygn is of fairer sight.
There be rivers great and fine
Of oil, milk, honey, and wine.
Water serveth there to no thing
But to sight and to washing.
There is, too, a very fair abbey
Of white monks and of grey.
The geese yrosted on the spit
Flee to that abbey, God it wot,
And cry "Geese, all hot, all hot!"

And "little larks," dipped in most delicious sauce, drop into the eater's mouth and are soon digested. But a land of such rare qualities is not to be lightly reached; and so we are informed that—

> Whoso will come that land to,
> Full great penance he most do,
> Seven years in swine's dirt
> He must wade, well ye wit,
> All anon up to the chin,
> So shall he this land win.

We have not too many well-edited works of our old authors, and we therefore welcome the editions before us as very valuable contributions to early literature; and, to those interested in the study of the dialects spoken in this country some centuries ago, we unhesitatingly recommend them.

PERSIAN THEOSOPHY.

Mantic uttaïr, ou le Langage des Oiseaux. Poëme de Philosophie religieuse, par Farîd-uddîn Attâr. Publié en Persan par M. Garcin de Tassy, Membre de l'Institut, &c. (Paris: 1857.)

La Poésie philosophique et religieuse chez les Persans, d'après le Mantic uttaïr, &c. By the same. Third Edition. (Paris: 1860.)

Mantic uttaïr, &c. Traduit du Persan de Farîduddîn Attâr. By the same. (Paris: 1863.)

"THE popular genesis is historical. It is written to sense, not to the soul. Two principles, diverse and alien, interchange the Godhead, and sway the world by turns. God is dual. Spirit is derivative. Identity halts in diversity. Unity is actual merely. The poles of things are not integrated: creation globed and orbed. Yet, in the true genesis, nature is globed in the material, souls orbed in the spiritual, firmament. Love globes, wisdom orbs, all things. As magnet the, steel, so spirit attracts matter, which trembles to traverse the poles of diversity, and rest in the bosom of unity. All genesis is of love. Wisdom is her form; beauty, her costume." Thus writes, or rhapsodizes, a gentleman of fathomless intent, who dreams dreams beyond the Atlantic. And most people, we suspect, would — though incorrectly enough — give to this incoherent outpouring the epithet of mystical. However, mysticism is a very different thing from that congener of nonsense—so well exemplified by our transcendental New Englander—known, in propriety of language, as mistiness. But of both the effect is, on ordinary minds, much the same; and there is something common, likewise, in their origin. To be simply muddy and past understanding may betoken nothing but stupidity; but, whether in order to be muddy or to be mystical, considerations of logic must be allowed small intrusion. And hence it is, as regards mysticism, that we see it to be so nearly the same as the concomitant of all religions. Given a belief in God, and a devout imagination suffered to run riot, dogma being kept the while in abeyance, and the result is a mystic. Not to wander beyond our own shores, we find mysticism to be quite independent of any nine-and-thirty or other tale of articles, and breaking out pretty equally among high churchmen, low churchmen, and almost every sect except the Socinian. But, whatever his creed, the mystic, fully developed, no doubt lands in impiety, and on the confines of pantheism, if not in pantheism itself. The abnegation of self, to which he lays claim, seems, in the eyes of others, to be, rather, something very similar to self-deification. At all events, it is difficult to distinguish whether it be this or the last extreme of egotism. Nevertheless, the mystic, at least in the early stages of his ecstasies, is not without his psychological value, however we refuse to his reveries our sympathy or approbation. He proves to us that a yearning for something beyond the realm of the senses is innate in our species. In doctrinal and practical Hinduism there is, surely, sufficiently little to stir the affections or to elevate the soul; and yet mystics are as common in India as they are in Christendom. Take, again, Mohammedanism. And here we borrow an eloquent and exhaustive definition of it from the pen of M. Renan. "L'islam," he says, "est le dédain de la science, la suppression de la société civile; c'est l'épouvantable simplicité de l'esprit sémitique, rétrécissant le cerveau humain, le fermant à toute idée délicate, à tout sentiment fin, à toute recherche rationnelle, pour le mettre en face d'une éternelle tautologie: *Dieu est Dieu.*" For all its being thus, however, the followers of the Arabian prophet have originated the Sûfîs, a school of mystics to which, in point of duration and numbers, Europe has furnished no equal.

To these quietists belonged Muhammad bin Ibrâhîm, surnamed Farîduddîn, "the Pearl of Religion," and self-sobriqueted, as a poet, Attâr, "the Perfumer." The place of his birth appears to be unknown; but he was long resident at Nishâpûr, in Persia, as is testified by an inscription to his memory which still exists in the environs of that city. If the accounts that we have of his life may be credited, he was born A.D. 1119, and died at least as early as A.D. 1230, massacred by the soldiers of Changhez Khân, in the hundred and eleventh year of his age Originally he was engaged in trade; but a passing remark from a stranger turned his thoughts into a new channel. It is related that, as he was one day tending his shop, a dervish who was going by paused and heaved a deep sigh at the sight of Farîduddîn's treasures. Farîduddîn requested him to go his way. "Thou art right," returned the dervish; "the journey of eternity is, for me, easy. Nothing am I impeded; for I have nought on earth but my tunic. With thee, who hast all this wealth, it is alas! far otherwise. Bethink thyself to prepare for this journey." Impressed by this speech, Farîduddîn at once embraced a life of contemplation. Still he lapsed, at intervals, into activity, so as to end a voluminous writer. Only one of his compositions is in prose—the "Memorial of the Friends of God," a series of biographies of the Mohammedan saints. Of verse he left a hundred thousand stanzas. The most celebrated of his works is that under notice, of which there are translations in the Turkish and also in the Hindustani. His "Book of Secrets," it is said, was the instrument of converting to his own views his contemporary, Jalâluddîn Rûmî, author of the *Masnavî*, perhaps the most celebrated treatise of mysticism that has come out of the East.

The title of the *Mantic uttaïr* is borrowed from the Koran, xxvii. 16: "Solomon succeeded to David; and he said, O men! I know *the language of the birds.*"

A sketch of the poem may be given in a few words. The birds were republicans, but longed for a king. The hoopoo—who, agreeably to the Rabbinical and Mohammedan traditions, served Solomon as guide when he went to see the Queen of Sheba, and who was, consequently, a connoisseur of royalty—proposed to them Sîmurgh, a wonderful bird that dwelt on the Caucasus. To this proposal they all agree, and prepare for their route. Dangers and difficulties threaten, and some of them protest. But the hoopoo refutes their objections, and at last they set out. What with hunger, thirst, and fatigue, the greater part of them perish on the road; but thirty of the company, through hardships, and after traversing seven mysterious valleys, eventually reach the Sîmurgh. The word Sîmurgh signifies, in the Persian language, *thirty birds.* Thus the birds, by which the poet intends men, discover themselves to be one with the Sîmurgh—that is to say, the Supreme. Such is the allegory which Farîduddîn employs to inculcate the unity of all beings and the existence of God under the type of the wondrous bird of the Caucasus.

After first publishing an epitome of the *Mantic uttaïr*, M. de Tassy has translated it in full. His epitome is copiously and most learnedly illustrated; and his translation is what might be expected from one of the most erudite and conscientious of the French orientalists. In a word, it leaves nothing to be desired. And as much may justly be said of his sumptuous edition of the Persian original.

As an alternative to presenting, at the risk of doing injustice, a specimen of this curious work, we prefer to give M. de Tassy's recapitulation, based on Farîduddîn, of the principles of the Sûfîs. They are as follows:—

I. God alone exists: He is in all, and all is in Him.

II. All beings, whether visible or invisible, are emanations from Him, and are not really distinct from Him. Creation is a sort of sport of the Deity.

III. Paradise and hell, and all the dogmas of positive religions, are but allegories, of which none but the Sûfî penetrates the true signification.

IV. Hence religions are indifferent. Still, they serve as a means for arriving at reality. To this end some are more profitable than others: and predominant stands the Mohammedan religion, of which Sûfîism is the philosophy.

V. The distinction between good and evil is unreal; for both converge in unity; and God is, thus, the author of human actions.

VI. It is God that determines the will of man; and, consequently, man is not a free agent.

VII. The soul pre-existed, and is confined in the body, as if in a cage or a prison. The Sûfî should, therefore, welcome death; for through death he is to enter the bosom of the Deity, whence at first he emanated, and is to be annihilated in God.

VIII. It is through the medium of metempsychosis that souls which have not accomplished their end in this world are purified and rendered worthy of being reunited with God.

IX. The chief occupation of the Sûfî should be to meditate on unity, and to advance himself gradually in spiritual perfection, so that he may die in God and attain unification with God.

X. But for the grace of God, spiritual union is impracticable. God, however, will refuse His grace to none that fervently aspire after it.

NOTICES.

L'Idéographie: Mémoire sur la Possibilité et la Facilité de former une Ecriture générale, au moyen de laquelle tous les Peuples puissent s'entendre mutuellement sans que les uns connaissent la langue des autres. Écrit par Don Sinibaldo de Mas, Envoyé Extraordinaire et Ministre Plénipotentiaire de S.M.C. en Chine, &c. (Paris: B. Duprat, and J. Rothschild; London: Williams and Norgate. Pp. 236.)—THIS book, the author of which is Don Sinibaldo de Mas, the Spanish Ambassador Extraordinary and Minister Plenipotentiary in China, is, we should say, one of the greatest literary curiosities of the age. In order to give some idea of its nature and purpose we shall translate the greater part of the preface. "Ideography," the author there says, "is the art of writing with signs which represent *ideas*, and not with the words (sounds) of any particular language. The signs of arithmetic and algebra are ideographic, as one sees in the following example of the number 25, written in different languages." [Here the author gives a list of the words useds for the number *twenty-five* in some twenty different languages—*Twenty-five* in English, *vingt-cinq* in French, *fünf-und-zwanzig* in German, *quinque et viginti* in Latin, *venticinque* in Italian, *dvatsetpiat* in Russian, *veinte y cinco* in Spanish, *icosi pende* in modern Greek, *ognei ta borst* in Basque, *hhamsi on asherin* in Arabic, *eu chi ou*, in Chinese, &c., &c.—calling attention to the fact that the peoples using all these different spoken languages at once recognise or may recognise the same unvaried written symbols 25 as expressing the meaning so variously spoken.] "It is the same with the algebraic signs $>$ (greater than), $<$ (less than), $\sqrt{\ }$ (root), + (plus), − (minus), × (multiplied by), = (equal to), &c. The problem, then, is to extend this system of ideographic signs to all the ideas necessary for the expression of thought. Leibnitz, Volney, and many other philosophers and writers more or less celebrated, have imagined the formation of such a language, whether written or spoken. It has been generally named *the universal language*—not that any one believed that it could displace the different languages of various nations, but because ideographic writing would at least be an easy means for peoples to understand each other without knowing each other's languages. The attempts yet made have yielded no satisfactory result; and even serious men have been able to smile at those who sought to realize an ideographic system of writing. It is, nevertheless, remarkable that this should have been judged

impossible, the existence of an ideographic system of writing over a large part of Asia being all the while a well-known fact. The inhabitants of the different provinces of China (in which quite different languages are spoken, so far as the *sound* is concerned)—the Japanese, the Cochin-Chinese, &c. —understand each other by means of the same system of writing. I have been a witness of various discussions among Asiatics, who were utterly unable to understand each other's speech, but who yet, by means of paper and pencil, conversed, disputed, or transacted important commercial business. Five hundred millions of human beings (more than half the civilized world) practise ideographic writing every day; as for the Chinese, they know no other. How then can the *possibility* of such a system be doubted? Should we be incapable of doing what is done by the Asiatics, whom we regard as so inferior to ourselves?" It is the object of Don Sinibaldo de Mas in the present work not only to demonstrate the practicability of such a system of universal ideographic writing, but actually to offer a sytem for adoption. What the system is it would be impossible here to describe. Suffice it to say that it consists of marks placed on and between five parallel horizontal lines, as in music—so that a bit of the ideographic writing (and the book abounds with specimen-bits, some in the text, and others in appended sheets of thicker paper) looks very like a bit of written music, in which twirls and commas and curves are added to the crotchets. This writing, however, is intended to be read off by the mind, without the intervention of sound; and there is a distinct portion of the work devoted to a universal sonographic system in connexion with ideography. The book seems singularly complete for its purpose. There is a specimen of an ideographic vocabulary; there are examples of various bits of speech, narrative and other, ideographically rendered; and there is actually an ideographic translation of 150 lines of the "Æneid"—that is, a set of pages containing music-looking marks arranged as above, which, according to the author, would convey accurately the *meaning* of these 150 lines to the mind of any person knowing the system, quite independently of his spoken language. "I suppose," says the author, "that whoever sees this ideographic version of the 150 first lines of the poem (the *first* lines and not selected lines) will not doubt that I should be able to translate all the rest." The description we have here given of the work will be enough to send those who are interested in the scheme it discusses to the work itself. The book, we repeat, is one of the curiosities of our time.

The Earnest Student: being Memorials of John Mackintosh. By Norman Macleod, D.D., Minister of the Barony Parish, Glasgow, &c., &c. (Strahan & Co. Pp. 483.)—THE memorials of John Mackintosh consist of extracts from his letters and diary, with brief connected narrative from the pen of Dr. Macleod of Glasgow. The "earnest student" was born in Edinburgh, at the New Academy of which he was prepared for Glasgow University, where he appears to have remained two sessions. He afterwards attended some classes in Edinburgh, and ultimately completed his university career at Trinity College, Cambridge. He held a distinguished place as a student, both at school and at college; and his travels in France, Germany, Switzerland, and Italy, completed his education. He intended entering the ministry of the Free Church of Scotland; but, just as his knowledge and his experience were reaching maturity, he died. His body was brought home from Germany, that his dying request of being "buried near the grave of Chalmers, his revered instructor," might be complied with. The "earnest student" seems always to have been "religiously impressed" in no ordinary degree; and it is perhaps owing to this, as much as to keenness of observation or literary elegance in his letters, that his "Memorials" have gone through a dozen editions. His "earnestness," indeed, is a continual reproof to the reader, who is not allowed to wander by the Arno or the Tiber, to meditate on the departed glory of Rome, or gaze on the beauty of the Apennines, without being ever and anon theologically pulled up. He is on the Esquiline, chatting with Mæcenas and Horace perhaps, when "prayer-meeting to-night at eight," from an unseen speaker, sends a quiver through his nerves; or he is standing in the Appian Way, gazing at the triumphant Cæsar, when the balance of his whole nature is agitated by his hearing it thundered in his ear—not that he is mortal (that would be classical and in perfect harmony with a Roman triumph), but that he is a poor "miserable sinner." This is, no doubt, the orthodox frame of mind to be in; but it is a new way of doing the Continent. Even at Vallombrosa the dominant idea with Mr. Mackintosh was, that "it would be the most delightful thing on earth to spend a Sabbath there where all was Sabbath." It is scarcely fair, however, to expect that the cogitations of an earnest Calvinistic student should run in the same groove with those of a Byron. Mr. Mackintosh can, nevertheless, say good things; and, although the following quotation, which we take at random, may not embody anything very original, it contains sound judgment aptly expressed:—"I feel impressed with the greatness of the French as a people, which, from national prejudice, I have been slow to admit. They seem to me most like the ancients of any modern nation, and a sort of combination of the Greek and the Roman, having the feebleness, subtlety of intellect, and vivacity of the one, the ambition and nationality and grandeur of the other. Napoleon must have been a genuine Roman. Alas, that they resemble the ancients also in their atheism and idolatry!" Principal Forbes of St. Andrews, with whom, when he was Professor of Natural Philosophy at Edinburgh, Mr. Mackintosh travelled in France, thus speaks of him: "His characteristics were love and truth; he was a model of docility, intelligence, and perseverance as a student; of gratitude, faithfulness, and forbearance as a friend; of humility, purity, and devotion as a Christian." Dr. Macleod has performed his editorial duties with judgment as well as with affection.

Geology for the Million. By Margaret Plues. Edited by Edward Wood, F.G.S. (Routledge, Warne, and Routledge. Pp. 159.)—BESIDES sundry illustrations scattered through the text, this volume devotes seven entire pages to carefully got-up woodcuts. The authoress conveys her geological information in plain, intelligible language; and there is little doubt the volume will become popular. The spirit of the writer will be gathered from the following quotation. Talking of the Book of Nature and the Scriptures, she says:—"Any difficulties which *seem* to exist arise out of our prejudiced minds and finite capacities; let us at once realize that we know nothing yet as we ought to know, and be content to wait for God's further teaching to reveal to us the harmony between His acts and His words, and then every wonder of earth and every revelation of heaven will lead us to a more childlike and rejoicing faith."

First Steps in Drawing. (Victor Delarue.)—So far as drawing can be learned from the flat and without the aid of a teacher, it may be learned from these "First Steps." The publication consists of twenty-eight parts, which are divided into "Simple Outlines," "Animals," "Figures," "Landscapes," "Genre," and "Ornaments." Each page consists of a simple outline, drawn in squares, with a corresponding blank space, also squared off, for the pupil to fill in. On the opposite page the same study, shaded, and without the squares, is repeated, with a blank as before for the pupil. The drawings are evidently by a French hand, which, in the estimate of many of our readers, will be an advantage. From the low price, as well as from the simplicity and attractive nature of the drawings, the publication ought soon to be in the hands of those for whom it has been so carefully got up.

A Letter to the Women of England on Slavery in the Southern States of America: considered especially in reference to the Condition of the Female Slaves. By Edward Yates, M.A., Barrister-at-Law. (Snow. Pp. 68.)—THIS letter is written in a very combative spirit, and in an ever-recurrent semi-legal phraseology, not at all grateful to the ear. The author repeats, for instance, in different parts of the pamphlet, at least four times, the following sentence:—"Observations and accounts by myself, in illustration of the gentleman's story; and I desire it to be distinctly understood I hold myself responsible for the truth of every observation, and every illustration of, the truth of the story, though not for the truth of the story itself." Since this is the case it is a pity he introduced the story at all. When he drops the semi-legal style he falls into the semi-prurient, as when describing the quadroon female slaves. Many of the facts to which he alludes are, we fear, but too authentic; but a respect for humanity will not allow us to regard them as other than exceptional. Mr. Yates himself seems to grant this, for he tells us of "a respectable woman in New Orleans, who had her house burned down, and her garden destroyed, for habitually torturing a female slave." Mr. Yates is not a discreet advocate.

The Principles and Practice of Vegetarian Cookery, founded on Chemical Analysis, and embracing the most approved Methods of the Art. By the Author of "Fruits and Farinacea the Proper Food of Man." (Pitman. Pp. 272.)—IN this little volume, which is "dedicated to the memory of James Simpson, Esq., late President of the Vegetarian Society," vegetarians will find ample directions for making the most of the kinds of fare to which they restrict themselves; and the curious general reader, who is not a vegetarian, will get an insight into the resources of vegetarianism in the way of possible variety of dishes. In the beginning of the book there is a good deal of scientific disquisition on topics connected with alimentation and the chemistry of food; but in the body of the book there are miscellaneous receipts for vegetarian soups, sauces, stews, puddings, pies, porridges, &c., &c. The sense of the absence of meat all through the book makes its dishes look insipid; but this may be prejudice, and we have met with some dishes that look savoury enough. But, as we have said, the book is one chiefly for vegetarian households. Whether these are many or few we know not. We knew one vegetarian who reduced himself for a time, by way of experiment, to the lowest form of diet possible—mushrooms, which he gathered himself, and cold water. This vegetarian afterwards took back to meat; and his verdict was that one could live equally with meat or without meat, but that it was, on the whole, least troublesome to do as other people did, and eat meat.

A Speech delivered before the Judicial Committee of Her Majesty's Most Honourable Privy Council in the Cause of Wilson v. *Fendall on Appeal from the Arches Court of Canterbury.* By Henry Bristow Wilson, B.D., Vicar of Great Staughton, Hunts, Appellant. (Longman, Green, & Co. Pp. 152.)—BESIDES Mr. Wilson's speech, which occupies 152 pages, and in which he replies at great length—historically, doctrinally, and critically—to all the charges brought against him in connexion with that portion of the "Essays and Reviews" of which he is author, the pamphlet contains twenty-one pages of legal and technical matter, such as "Extracts from Proceedings in the Court of Arches," "Prayer," "Articles of Charges as Reformed and Admitted," "Extracts from the Interlocutory Judgment delivered in June 1862," &c., &c. The pamphlet is a contribution of no ordinary value to polemical literature.

Commemorations of the Departed: A Sermon preached at the Consecration of the Chapel at Wellington College, July 16th, 1863, by Samuel, Lord Bishop of Oxford, Lord High Almoner to the Queen, Chancellor of the Most Noble Order of the Garter. (Oxford and London: J. H. and J. Parker. Pp. 14.)—ELEGANT, yet earnest and practical, the sermon of the Bishop of Oxford will be read by every one with pleasure. It is inscribed to "Edward Geoffrey, Earl of Derby, President of Wellington College," in whose presence it was preached, and at whose desire it has been published.

The Case of Ireland, being an Examination of the Treaty of Union between Great Britain and Ireland. By Joseph Fisher, Author of "How Ireland may be Saved," &c. &c. (Ridgway. Pp. 233.)—THIS pamphlet consists of a series of letters into which statistics largely enter. The subjects discussed are "The Principles, Debates, and Treaty of the Union," "Ireland after the Union," "The Taxation of Ireland from 1821, and its Effects," &c. The main idea of the writer is that Ireland is "excessively taxed." His mode for redressing Ireland's wrongs, however, is perfectly constitutional.

Life and Death of the Irish Parliament, being the substance of Two Lectures delivered in the Metropolitan Hall, Dublin, by the Right Hon. James Whiteside, Q.C., Reviewed and Corrected by the Rev. Sylvester Malone, C.C., Kilkee. (Dublin: Fowler. Pp. 50.)—THE eloquent Queen's Counsel is rather severely handled by Mr. Malone, who is both historical and polemical in his strictures. His pamphlet, as well as the preceding, will be read eagerly by all interested in Irish politics.

PUBLICATIONS OF THE WEEK.

ALBITÈS (Achille, LL.B.) How to Speak French; or, French and France: Facts, Reasons, Practice; a condensed, simplified, and progressive Cyclopædia of the French Language, and of the History, Literature, and State of France. Seventh Edition, Revised. 12mo., pp. 256. Birmingham: *Hudson. Longman.* 5s. 6d.

ANONYMA; or, Fair but Frail. A Romance of West-End Life, Manners, and "Captivating" People. Fcap. 8vo., bds., pp. 327. *Vickers.* 2s.

BATEMAN (Joseph, LL.D.) Practical Treatise on the Law of Auctions; with Statutes, Cases, Forms, Rules, and Tables, and Directions to Auctioneers. Fourth Edition. By Rolla Rouse, Esq. Roy. 12mo., pp. xxxii—488. *Maxwell.* 10s. 6d.

BEST (William, B.A.) Baptism: What it is, and Why it is Neglected. 32mo., sd., pp. 35. Leeds: *Hamer. Simpkin.*

BONAR. Hymns for the Use of Christian Families and of Sabbath Schools. Edited by the Rev. Andrew A. Bonar. Third Edition. Fcap. 8vo., sd., pp. viii—112. Edinburgh: *Maclachlan and Stewart.* 1s.

BOWES (Arthur). Practical Synopsis of English History; or, a General Summary of Dates and Events for the Use of Schools, Families, and Candidates for Public Examinations. Fourth Edition. 8vo., cl., sd., pp. 32. *Bell and Daldy.* 2s.

BRADLEY (W. W., M.A.) Lessons in Latin Prose: consisting of Rules and Exercises, and forming an Easy Introduction to the Writing of Continuous Latin Prose. 12mo., pp. viii—339. *Longman.* 5s.

BROWN (Samuel, F.S.S.) Report on the Madras Military Fund. Containing New Tables of Mortality, Marriage, &c. (1808 to 1858). Sup.-roy. 8vo. *C. and E. Layton.* 31s. 6d.

CÆSARIS (C. Julii). Commentarii de Bello Gallico. Libri 1-5. From the Text of Schneider, carefully Revised; with various Readings from the best extant Editions, comprising those of Oudendorp, Harzog, Nipperdey, Elberling, Kraner, and others. Elucidated by Notes, Critical and Explanatory, a Lexicon of all the Words in the Text, and a Series of Easy Reading Lessons for Beginners. Designed as a First Latin Reading-Book in Schools. By A. K. Isbister, M.A. 12mo., pp. xxxii—176. *Longman.* 3s. 6d.

CALTHROP (Rev. Gordon). Lectures to the Working Classes. Fcap. 8vo. Cheltenham: *Edwards. S. W. Partridge.* 2s. 6d.

CHURCHMAN'S FAMILY MAGAZINE (The). Containing Contributions by the Clergy and Distinguished Literary Men. Vol. 1. With Illustrations. 8vo., pp. 636. *Hogg.* 9s.

CIVIL SERVICE OF INDIA. Examination Papers. July, 1863. Fol., sd., pp. v—40. *Stanford.* 2s. 6d.

COLLECTION (A) of the Public General Statutes passed in the 26th and 27th years of the Reign of H.M. Queen Victoria, 1863. Roy. 8vo., bds., pp. xi—1012. *Eyre and Spottiswoode.* 15s. 9d.

CROWQUILL (Alfred). Tales for Children. First Series. Tiny and her Vanity. The Giant Hands. The Giant and the Dwarf. With Coloured Illustrations. Imp. 16mo. *Routledge.* 2s. 6d.

CROWQUILL (Alfred). Tales for Children. Second Series. Patty and her Pitcher. Peter and his Goose. The Selfish Man. With Coloured Illustrations. Imp. 16mo. *Routledge.* 2s. 6d.

DANA (James D., A.M.) Manual of Mineralogy, including Observations on Mines, Rocks, Reduction of Ores, and the applications of the Science to the Arts. With 260 Illustrations. Designed for the use of Schools and Colleges. New Edition, revised and enlarged.—Cr. 8vo., pp. 456. *Trübner.* 7s. 6d.

DANIEL (Evan). Outlines of English History. From the Roman Invasion, B.C. 55, to the Year A.D. 1863. Fcap. 8vo., pp. 288. *National Society's Depository.* 2s. 3d.

DEFOE (Daniel). History of the Plague of London. (1665.) With Illustrations. (Laurie's Shilling Entertaining Library.) 18mo., pp. xii—206. *Longman.* 1s.

DEMAUS (Rev. Robert, M.A.) Class-Book of Scripture History. With Illustrations. Fcap. 8vo., pp. xi—272. *Black.* 2s. 6d.

FIRST STEPS IN DRAWING. For Beginners. Fcap. 4to., bds. *Ward and Lock.* 2s. 6d.

GAMGEE (John). Our Domestic Animals in Health and Disease. Third Division. Organs of Secretion.—Urinary System; its Functions and Disorders.—Cutaneous System; its Functions and Disorders.—Epizootic and Enzootic Maladies. With numerous Illustrations. Cr. 8vo., pp. viii—320. Edinburgh: *Maclachlan and Stewart. Simpkin.* 6s.

GUIDE (A) to the English Lake District, intended principally for the use of Pedestrians. By a Cambridge Man. With Illustrations and Maps. Fcap. 8vo., pp. vi-96. Windermere: *Garnett. Simpkin.*

HANDBOOK (The) of Manly Exercises; comprising Boxing, Walking, Running, Leaping, Vaulting, &c. With Chapters on Training for Pedestrianism and other Purposes. By "Stonehenge," "Forrest," &c. (Routledge's Sixpenny Handbooks.) 18mo., bds., pp. 64. *Routledge.* 6d.

HOSKINS (G. A., F.R.G.S.) Winter in Upper and Lower Egypt. With an Illustration. 8vo., pp. xiii—346. *Hurst and Blackett.* 15s.

JACK ASHORE. By the Author of "Rattlin the Reefer," &c., &c. New Edition. (Naval and Military Library.) Fcap. 8vo., bds. *C. H. Clarke.* 2s.

JACKSON (John, D.D.) Sinfulness of Little Sins. Fifteenth Edition. 18mo., cl. sd., pp. 134. *Skeffington.* 1s.

JENNER (Edward, M.D., F.R.S.) On the Origin of the Vaccine Inoculation. 4to., sd., pp. 8. *Elfick.* 1s.

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LETTERS FROM THE CRIMEA DURING THE YEARS 1854 AND 1855. Fcap. 8vo., cl. sd. *Emily Faithfull.* 2s.

LYRA (Rev. Robert, M.A.) Lyra Christiana. New Edition. 32mo. *Houlston.* 1s. 6d.

MAGNET STORIES (The) for Summer Days and Winter Nights. By Mrs. S. C. Hall, Thomas Miller, Julia Corner, Frances Browne, W. Heard Hillyard, Sara Wood, Frances Freeling Broderip. With Illustrations. Vol. 6. Fcap. 8vo., pp. 320. *Groombridge.* 2s. 6d.

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NEW HOME (The); or, Wedded Life; its Duties, Cares, and Pleasures. By the Author of "A Woman's Secret; or, How to make Home Happy," &c., &c. Third Edition. Fcap. 8vo., pp. 86. *Jarrold.* 1s.

PHILLIPS (Wendell). Speeches, Lectures, and Letters. Cr. 8vo. *Trübner.* 10s. 6d.

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STANDING ORDERS (The) of the Lords and Commons Relative to Private Bills; with Appendix, containing Table of Fees Charged at the House of Commons, Standing Orders of the House of Commons relative to Public Matters, and other Information respecting the Proceedings necessary to be taken by the Promoters and Opponents of Bills. And with Copious Indexes. For Session 1864. 12mo., pp. 240. *Begg.* 5s.

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WORDSWORTH (Chr.) Journal of a Tour in Italy. Second Editiod. Two Volumes. Post 8vo. *Rivingtons.* 15s.

MISCELLANEA.

ACTIVE preparations are being made in Edinburgh for the meeting of the Social Science Association, which is to begin there on the 7th of October, under the presidency of Lord Brougham, and to continue till the 14th. The meeting will be opened by an address by Lord Brougham on the evening of the 7th; and the Six Departments will begin their work on the following day. The *Jurisprudence* Department will be under the presidency of the Scottish Judge, Lord Curriehill; the *Education* Department under that of Mr. Nassau Senior; the *Punishment and Reformation of Criminals* Department under that of the Scottish Judge, Lord Neaves; the *Public Health* Department under that of Professor Christison; the Department of *Social Economy* under that of Sir John McNeill; and the *Trade and International Law* Department under some one yet to be chosen. The meetings will take place chiefly in the Parliament House and the Free-Church Assembly Hall. On the evening of Friday, the 9th of October, there is to be a great working-men's meeting, with Lord Brougham in the chair. There will, of course, be *conversazioni*, promenades, art-exhibitions, and private hospitalities all through the week; and the opportunity of Lord Brougham's being in Edinburgh is to be taken for holding the anniversary of the foundation of the famous Speculative Society, of which he was a member in his youth.

THE clerk of the weather is again at his post. Admiral Fitzroy has returned to his offices at the Board of Trade, Whitehall, and his valuable services have recommenced.

DR. JAMES MURIE, the naturalist attached to Consul Petherick's African expedition, has returned to England.

THE expedition which set out from Victoria (British Columbia) eighteen months ago to explore the Cascade Mountains which run parallel with the Rocky Mountains on their westward side, has met with a termination as unfortunate as the United States expedition, which aimed at reaching this district through the gorges and cañons of the Colorado River. Seven only of the twenty-two explorers who started to penetrate into, and examine this marvellously wild country, returned to Victoria. One of these stout-hearted travellers, Mr. F. Poole, is now in London, preparing, we are glad to hear, his narrative of perilous travel for the press.

FOR the week ending Friday, September 11th, the number admitted to the Crystal Palace was 38,509. On Tuesday last, Mr. Strange's annual *fête*, to attend which Blondin came over expressly from Spain, and exhibited on the low rope, 34,879 persons paid for admission, and 4151 were admitted by season-tickets, making a total of 39,030.

IN the list of deaths of the week there is one claiming mention in these pages—that of Mr. Joseph Gwilt, the architect, on Monday last, at South Hill, Henley-on-Thames, at the ripe age of eighty. Besides several works of a strictly professional nature, like his "Rudiments of Architecture," which appeared in 1826, Mr. Gwilt published an elegant translation of "Vitruvius" in the same year, and in the previous one he edited, in a most scholarlike manner, Sir William Chambers's "Treatise on Civil Architecture"—both books still held in considerable estimation by scholars and professional men.

THE *Literary Times*, after half-a-year's trial, published its last number on the 5th instant, having just previously raised its price from one penny to twopence. The *Critic*, which for some time past has ceased to be a weekly publication, and has become a monthly journal, announces that it will in future abandon criticism, and confine itself to the collection of information.

THE following, by Professor Rötscher in Berlin, is circulating in the German papers:—"The three hundredth birthday of Shakespeare will fall in April 1864. England is already busy preparing its worthy celebration. But Shakespeare belongs to the whole civilized world. In no country is the memory of, and the homage to, the great poet more vivid than in Germany, where, without any doubt, he has best been understood and prized highest. His memory is only to be celebrated by some foundation for the benefit of mental activity. Let us therefore have a Shakespeare fund, acting in his spirit, by teaching and spreading a better understanding of himself, and by providing the means of developing and heightening the spirit of dramatic creations in the sense of Shakespeare. Enthusiastic admirers of the poet should unite towards the collection and management of such a fund from all parts of the common fatherland."

IT is said that Mr. Gladstone has promised to lay the foundation-stone of the Wedgwood Memorial at Burslem on the 20th October. The Committee of Council have contributed £500 towards the building.

SIR DAVID BAXTER, who has recently presented the people of Dundee with a park of the value of £50,000, has funded £3000 in the name of trustees for the foundation of two scholarships in the University of Edinburgh of the annual value of £60 each.

MESSRS. TRÜBNER & CO. have sent us a volume of 562 pages of Speeches, Lectures, and Letters, by Mr. Wendall Phillips, the American orator. The book is elegantly printed at the Cambridge U.S. University press, and published by Mr. Redpath of Boston. The first volume of a German

account of the war in America has just been published at Hartford, U.S., entitled, "Die Grosse Rebellion. Eine Geschichte der Buergerkrieges in den Vereinigten Staaten. Von J. T. Headley."

Mr. W. V. Harcourt, the author of the "Letters of Historicus," which appeared originally in the *Times*, has in the press "Leading Cases of International Law, with a Commentary," which will be published by Messrs. Macmillan & Co., who also announce "A Treatise on the Fishery Laws of the United Kingdom, including the Laws of Angling," by James Patterson, Barrister-at-Law. Messrs. Macmillan & Co. have also in the press: "Lessons in Elementary Physiology, with numerous Illustrations," by Professor Huxley; "Stimulants and Narcotics, their Mutual Relations; with Special Researches on the Action of Alcohol, Æther, and Chloroform on the Vital Organism," by Dr. Anstie; and a "Manual of Logic and Metaphysics," by Professor Alexander C. Fraser, of Edinburgh.

Messrs. Low, Son, & Co. announce a new and important work by Mr. P. Barry, author of "The Dockyards and Shipyards of Great Britain, &c.," entitled "Dockyard Economy and Naval Power," the portion of the work relating to French dockyards and shipyards being based on information obtained on the spot.

Messrs. Maxwell & Co. will publish in a few days a novel of mercantile life, "Secrets of my Office, by a Billbroker," and on the 30th instant, "The Cross of Honour," by the Author of "Philip Morton."

Messrs. Houlston and Wright will publish early in October the first volume of a "Dictionary of Medical and Surgical Knowledge, and Practical Guide on Health and Disease, for Families, Emigrants, and Colonists."

The elegant game of Croquet numbers amongst its most enthusiastic admirers the author of "The White Gauntlet," who has just issued a thin little volume, under the title: "Croquet: By Captain Mayne Reid." The work must be considered *the* book on the subject, by which any disputed point arising out of this most fascinating pastime will have to be settled in future. The 126 laws of the game are given with copious explanatory notes.

Mr. Booth's accurate reprint of the first folio edition of Shakespeare will be completed as a volume and published on the morning of the 23rd of April, 1864, the tercentenary anniversary of the poet's birth. In the mean time, the "Second Part—The Histories," will be published in October, and the "Third Part—The Tragedies," in March.

Messrs. Bacon & Co., map-publishers of Paternoster Row, have just published (price 6d.) a new edition of their map of Charleston, with enlarged plans of Forts Sumter and Wagner; also (price 1s. 6d.) a new large "Steel-plate Map of America—Historical, Political, and Military." In this map the Federal Free States, the Federal Slave States, the Confederate States, and the Territories are distinguished from each other at a glance by conspicuous differences of colour. The map is also surrounded and margined by a considerable quantity of letter-press, which gives a large amount of such information relating to America as is most needed at this time. It comprises a chronological epitome of the history of the war, an account of the government and constitution, tables of distances, statistics of population, manufactures, railways, exports and imports, the number, character, and tonnage of the ships in the Federal navy, a list of forts, in topographical order, &c. A curiosity in the map is "an outline of England" in one corner, on the same scale as the map. The smallness of England territorially in comparison with the United States is thus very effectively brought out.

Anybody that likes, without infringing Mr. Pepper's patent rights in ghosts, may set up one for himself. We copy from the *Building News* the following extract from the English translation of John Baptista de Porta's "Natural Magic," written in 1558, and translated in 1658:—"How we may see in a chamber things that are not:—I thought this an artifice not to be despised; for we may in any chamber, if a man look in, see those things which were never there; and there is a no man so witty that will think he is mistaken; wherefore, to describe the matter, let there be a chamber whereinto no other light comes unless by the door or window where the spectator looks in; let the whole window or part of it be of glass, as we used so to do to keep out the cold, but let one part be polished, and there may be a looking-glass on both sides, whence the spectator must look in; for the rest do nothing. Let pictures be set over against this window, marble statues, and such like; for what is without will seem within, and what is behind the spectator's back he will think to be in the middle of the house, as far from the glass inward as they stand from it outwardly, and so clearly and certainly that he would think he sees nothing but truth. But, lest the skill should be known, let the part be made so where the ornament is, that the spectator may not see it, as above his head, that a pavement may not come between above his head; and if an ingenious man do this, it is impossible that he should suppose that he is deceived."

"Aurora Floyd" has been translated into German by F. Seybold, and published at Leipzig.

Miss Mulock's novel, "The Ogilvies," forms the 667th volume of the Baron Tauchnitz's "Collection of British Authors," the number of volumes of which is evidence of the popularity of English literature in Germany.

Professor Tischendorf comes forward in defence of the "Codex Sinaiticus" with a German pamphlet of thirty pages, under the startling title—"Weapons of Darkness against the Sinai-Bible."

Three new numbers of "The Modern English Comic Theatre, with notes in German by Dr. A. Diezmann," have just appeared at Leipzig. No. 66 contains Hancock's "John Smith;" No. 67 "Paul Pry;" and No. 68 Poole's "Turning the Tables."

The paragraph respecting the authorship of the "Stunden der Andacht," referred to in last week's number of The Reader as having been originally given in the *Journal de Genève*—in which it was stated that M. von Wessenberg and others had assisted in its production—has called forth a reply from M. Emil Zschokke, in which he claims the sole authorship for his deceased father, and refers to the "Selbstbiographie von Heinrich Zschokke," published in 1842, during the lifetime of M. von Wessenberg and others, whose surviving relatives now put forth this claim, and which asserts in as many words that the autobiographer "is alone responsible for the authorship of the work." The fact that this assertion has never been questioned for twenty-one years by the living friends of Henry Zschokke, who are now said to have assisted in the compilation, will, M. Emil Zschokke thinks, be sufficient proof that his father must be considered sole author of this celebrated book.

The missionary Joseph Wolff's curious memoirs have found a translator in Germany. They now appear under the title "Joseph Wolff: a Wanderer's Life."

Mr. George Peabody is said to have presented a geological cabinet of the value of £25,000 to Yale College.

We notice some good geology, pleasantly written, in a report made to the United States Government by Mr. Oscar Lieber, the geologist to the Labrador Exploring Expedition. The crater-shaped mountains of gneiss and syenite which occur in surprising numbers and persistency in form through the Aulezavik district are quoted as good instances of volcanic cones being simulated by rocks not of volcanic origin—an example which may usefully be compared with the "cones" described by Mr. Bainbridge (*vide* Brit. Assoc. Report, Sec. C) as occurring along the line of the Pennine and Craven faults. Mr. Lieber agrees with Prof. Phillips in his opinion of the origin of this deceptive form of mountain-peak. Pluvial (in the Labrador case, snow) and atmospheric action are competent to effect it—the absence of soil and vegetation enabling the melting snow to trickle freely down the sides of the mountain. "The vandyke brown of the mountain-group is relieved by nothing but the white snow. No tree is there. Still, in some of the level places, the snow-moistened moss-meadows flourish, and lend their gentle green or soft yellow to diversify and mellow the rough outlines of the landscape."

We are glad to observe in the annual report of the Board of Regents of the Smithsonian Institution (Washington) a contradiction to the statement which has been freely circulated, that the bequest of Smithson has been lost by improper investments. The original sum remains intact as a fund lent to the government, bearing interest at six per cent. The loss which the institution has sustained is that of 61,000 dollars, a portion of a sum accumulated since the death of the testator, and which was invested in Virginian and Tennessee State Bonds. It was hardly to be expected that, during the existence of an intestine war, and almost in the presence of two contending armies, this fine institution should have continued its condition of prosperity and success. It was at one time purposed by the government to use the buildings of the institution as temporary quarters for troops; but its governors, though raising no objections to this, if considered necessary, rightly suggested that it would be more in accordance with the spirit of the institution to employ the building as an infirmary. Happily, however, upon neither proposition has any action, as yet, been taken. The works issued by the institution for the present year may be shortly expected in England. Among them, as announced, is a valuable philosophical treatise upon the Dipterous order of Insects, by Dr. Loëw, in which some interesting results are given as to the existence in America of forms which in Europe are found only in the Tertiary; thus exhibiting one group of fauna as in analogous relation to that which is proved to exist between the living flora of the American continent and the fossil Tertiary flora of the European.

We take the following curious statistical items, respecting the number of editions issued of the French Classics in France, from the authentic information furnished to the "Commission of Literary and Artistic Property," by M. Imhaus, late Directeur de l'Imprimerie et de la Librairie. From 1714 to 1840 the *separate* works of Voltaire reached the high figure of 428 editions; while of the *complete* works, in France, England, and Holland, the editions were sixty-one. From 1840 to 1862 the average number of the partial editions of Voltaire's tragedies or historical works is 100; but of complete editions only three or four have appeared during that period. The editions of Corneille's *chef-d'œuvres* are innumerable; but of *complete* or *selected* editions only fifty editions were issued up to 1830. Of the "Théâtre Classique" of Racine 25,000 copies are annually struck off. His *separate* works have, up to 1835, been printed in forty-eight library editions—his *complete* works in about seventy. Molière's "Classical Theatre" appeared in 20,000 copies annually; his *separate* works in seventy, and his *complete* works in 150 editions. Crébillon's separate tragedies were issued in about fifteen editions, the oldest of which dates from 1707; Ducis's reached twenty-five or thirty. The complete works of Crébillon had thirty editions, and those of Ducis twenty. Of "Télémaque" there are printed about 10,000 copies a year. From 1700 to 1830 no less than ninety-five editions, some of great value, were issued. Some copies are sold at about 2000 francs. Massillon's works, comprising all his sermons, have had about twenty-five editions. Of his "Petit carême," his separate sermons, and some of his funeral orations there are issued about 5000 or 6000 copies annually. Montesquieu's "Grandeur et Décadence des Romains," which went through four editions during his lifetime, has had about thirty since his death, and an immense number of copies are struck off annually. The "Esprit des Lois" went through twenty editions with an enormous number of copies; the "Lettres Persannes" had twenty-five, the miscellaneous works thirty, and the complete works thirty-five editions. The complete works of Pascal have only had ten editions; but certain illustrations have considerably added to their sale. From 1710 to 1835 the "Pensées" went through ten editions; and since then they have gone through ten or twelve. The "Lettres Provinciales" had about forty editions, besides the twelve editions of the Latin translation, the first of which dates 1658. The dramas of Beaumarchais have produced, separately, forty editions. His "select works" had about seven or eight, and his "complete works" about fifteen. Le Sage's novels had one hundred editions, including the Spanish, Portuguese, and other translations. His "theatre" went through forty, and his select or complete works through ten or twelve. The different philosophical, political, literary, and other works of Rousseau have gone through about 185 editions, including the translations. His complete or selected works went through from sixty to sixty-five editions. Florian's Fables, mostly stereotyped and with illustrations, have had more than one hundred editions. Lafontaine's Fables, with about ten editions every year for the last 200 years, have thus reached the figure of about 2000. Of the "Contes" there have appeared nearly fifty editions of real value. The piracies, with or without engravings, are innumerable.

On the estate of M. Emile Pereire, near Candos, situated on the line between Bordeaux and Bayonne, a golden bracelet of Gallic origin has been found. It is of the rare weight of 330 grammes and 6 decigrammes. The chemical examination of the gold at the Mint has shown it to contain 866 parts of gold and 134 of silver.

The measurement of the Guano beds on the coast of Peru has shown the Macabi Islands to contain about 1,500,000 tons, the Guanape group 2,500,000, the Lobos Islands 4,000,000.

THE new French translation of Shakespeare by François Victor Hugo is not at all founded on Letourneur's version, but is one made entirely from the English text itself, and illustrated with notes, historical, legendary, and critical; and the appendices occasionally give the entire legend upon which the play is founded, from manuscript and printed sources.

RENAN'S "Vie de Jésus" has been translated into Turkish at Constantinople.

RENAN'S "Vie de Jésus" has been ordered to be destroyed by the Jewish congregations in Rome. So has Colenso's "Pentateuch, and Book of Joshua critically examined."

A THIRD German translation of Renan's "Vie de Jésus" is about to be published.

AMONG new French periodical publications started within the last month are: "Le Casino: Compte-rendu des Concerts," Lyon; "La Fraternité, Journal populaire des Sociétés des Secours mutuels," Niort; "Le Moniteur des Transports par Chemins de Fer, &c.," Paris; "Le Moucheron," Toulon; "Muse gauloise: Journal de la Chanson par tous et pour tous," Paris; "Le Papillon: Journal artistique et littéraire," Roubaix; "Petit Journal des Connaisances utiles," Lyon; "Revue littéraire de Boulogne-sur-Mer," Boulogne; "La Semaine réligieuse du Diocèse d'Angers," Angers.

THE eleventh volume of Rochefoucauld's Memoirs, containing "Suite des Esquisses et Portraits, le Musée de Marine, Fin de la Première Partie des Mémoires, 1789-1830," has appeared.

"Des Évènements qui ont amené la Fin du Règne de Napoléon I.," by Charles de Saint Nexant, under the motto "Miserable men that we are—feebleness and error, this is our device," from a letter of Napoleon to Ferdinand VII., was published a few days ago.

NAPOLEON I.'s "Correspondence, published by the order of Napoleon III.," has reached the thirteenth volume.

A NUMBER of Théophile Gautier's miscellaneous papers, published under the title "Emaux et Camées," has reached the second edition.

OF recent works and pamphlets on pending political questions we may mention "Éphémérides Polonaises," in two volumes; "La Mexique et l'Archiduc Maximilien," in French and Spanish, by Gultierez di Estrada; 'L'Espion Noir," by Émile Chevalier and Florian Pharaon, on the American war; and "Meryem," on Algiers, by Camille Perier.

"LE Roman de la Femme à Barbe," by P. Véron, is one of the latest productions of French sensation.

AMONG other works which Renan's book has called into existence, we have to notice a French volume—supposed to be a translation from the German—entitled "La Mort de Jésus: Révélations sur le véritable Genre de Mort de Jésus, traduites d'une Lettre Latine trouvée à Alexandrie et écrite par un Frère Essenien, contemporain de Jésus." The work, the publisher informs us, is to be considered as a continuation of the labours of Strauss, De Witte (*sic*), Bruno Bauer, Feuerbach, Baur, Arnold Ruge, and Ernest Renan.

THE following are among the more important military works issued within the last few days:—"Constitution et Puissance militaires comparées de la France et de l'Angleterre," by Ch. Martin; "Lettres sur le Camp retranché d'Anvers;" "Études sur la Défense des États et sur la Fortification," by N. Brialmont; "also "Précis des Evènements de la Campagne de la Mexique en 1862," by C. Martin, preceded by a Geographical and Statistical Notice on Mexico, by Léon Delujy.

TWO pamphlets—"Des Services administratifs de l'Armée de Terre, par Reiffenberg," and Études comparatives sur les Armées des principaux États de l'Europe"—both translations from the German, have appeared in Paris.

DR. FISCHEL'S work on the "Constitution of England" is about to appear in a French translation from the pen of Ch. Vogel, author of the work "Portugal and her Colonies."

"LE Procès de Mirabeau en Provence, d'après des documents inédites," is the title of a small work by A. Joly.

T. JUSTE has written "The History of the Rising of the Netherlands against the Spanish Dominion" (1572—1574).

"AUGUSTE COMTE et la Philosophie positive," by E. Littré, has appeared at Hachette's.

THE third volume of the "Traité des Impôts, considérés sous le Rapport historique, économique, et politique en France et à l'Étranger," by Esquiron de Parien, has appeared.

A FURTHER instalment of Boucher de Perthes's "Sous dix Rois: souvenirs de 1791 à 1860," has appeared.

"LES Sémites à Ilion, ou la Vérité sur la Guerre de Troie," by Louis Benloen, Professor at Dijon, is the title of a new historical work by this well-known *savant*.

OF publications *à propos* of the fiftieth anniversary of Theodor Körner's death, celebrated everywhere in Germany, we notice: "Carl Theodor Körner: his life and death, and his tomb at Wöbbelin." Wöbbelin is a small village near Leipsic, where Körner's corpse was buried on the 27th of August, 1813, under an oak-tree, into the bark of which a companion-in-arms burnt with a hot iron the still legible words: "Theodor Körner, 26th August, 1813." In the autumn of 1814 the poet-hero's father had an altar erected near the tomb, adorned with the lyre, the sword, and a crown of oak-leaves in cast-iron. On the 15th of March, 1815, Körner's sister, Emma, died of a broken heart from the loss of her beloved brother. She was buried by his side, under the oak, "the double stem of which—a summer and a winter-oak—rises out of one root, then joins, and again divides itself into two arms, which finally in the crown are firmly linked into each other." When Körner's father, aunt, and mother died, they were all brought to their last rest under this oak, which now stands in an enclosure of about fifty square feet. Another work is simply called "Theodor Körner," by F. W. Vogler; and a third, which appeared some time ago, by Frederic Brasch, is "The Grave at Wöbbelin, or Theodor Körner and the Lützows."

THE fiftieth anniversary of the battle of Leipsic has given rise, among other publications, to a "Jubilee-Almanach," a practical little handbook, containing the table of the European regents of the time; the table of the French marshals of 1813; the "news of war," belonging to every day of the year 1813; a general view of the powers which fought with and against each other at Leipsic; and a clear and distinct description of the battle, with illustrations. We may also mention, as a work devoted to the same subject: "Heads from the German Wars of Liberation," of which those of York, Stein, and Queen Louisa have already appeared.

THE first volume of a "General History of Music," with numerous illustrations, has been issued at Stuttgart.

AMONG recent German novels, we may mention "The Green Fur," by Philip Galen, in four volumes, and "A Jewel," by E. von Bibra; also the following: "History of an Excommunicated Man, an Autobiography," by A. Smetana (second edition), with an Introduction by A. Meissner; K. Wartenbing's "French Life;" "A Joint-Stock Company," by Levin Schücking; "Through Two Generations," by Golo Raimund.

THE Freiherr Heinrich von Maltzan has just published in German, in four volumes, 8vo., "Three Years in the North-West of Africa; Travels in Algeria and Morocco."

THE first volume of Denzinger's "Ritus Orientalium, Coptorum, Syrorum, et Armenorum, in administrandis Sacramentis," a large octavo of 500 pages, just published, will be cordially welcomed by Liturgical scholars in this country. The second volume will complete the work.

DR. LOUIS BÜCHNER, author of "Von Kraft und Stoff," has just translated Sir Charles Lyell's "Geological Evidences of the Antiquity of Man" into German.

COLONEL H. DEHNEL has in the press "Erinnerungen Deutscher Officiere in Britischen Diensten, aus den Kriegsjahren 1805 bis 1816," collected for the most part in long and intimate intercourse with officers of the King's German Legion, and of the Brunswickers, and giving many curious unpublished particulars of the sieges and battles of the Duke of Wellington during the Peninsular War, and the Campaign of Waterloo.

THE "Memoirs of Charles the Fifth," edited by Keroyn van Lettenhore, have been translated into German by L. A. Warnkönig.

THE memoirs of Steffens, the celebrated naturalist, under the title "The Story of my Career as Student at Freiburg and Jena, and as Professor at Halle, Breslau, and Berlin; with Personal Reminiscences of Goethe, Schiller, Schilling, Schleiermacher, Fichte, Novalis, Schlegel, Neander, and others"—have appeared in an English translation by W. L. Gage, in America.

THE third and fourth volumes of Brachvogel's "Historical Tales" have appeared, containing: "Van Dyke's 'Rettung,'" a picture of the last days of "Merry Old England;" further, "The Gate of the Future," the subject of which is the last time of the ancient *régime* in France. A third tale treats of "Salomon de Caus," the supposed inventor of steam-power.

THE "Gymnastomania" raging at present in Germany has produced scores of books and papers on the subject of violent bodily exercise. We mention as the principal: "Leitfaden für den Betrieb einfacher Freiübungen in Turnvereinen;" "Das deutsche Turnen;" "Anleitung zur Ertheilung des Turnunterrichts;" "Norddeutsche Turnzeitung;" and "Allgemeines Deutsches Turnliederbuch."

WE find a number of "Handbooks for the Art of Boxing" among the latest German booksellers' advertisements.

A NEW "critico-literary institution" is about to be started in Berlin, which is to put an end to the "egregious evil" of random and incompetent criticisms. For the price of two thalers every book is to be reviewed by "competent and well-known authorities," and a lithographed copy of this review will be sent to the publisher. Besides this, the institute will undertake to print "prominent" works, and to sell them through its own agents, instead of booksellers!!

FRIEDRICH GERSTAECKER has published two volumes of tales, under the title "From my Diary," mostly sketches and anecdotes from the life of the restless and clever traveller.

J. M. HUTTERUS, a much-praised German novelist, has written "A Holy Evening" and "Three Weeks' Leave," published together under the uncompromising title "Novels."

THERE is an idea of acclimatizing reindeers in the Canton of Graubundten, in Oberengadin, where the climate is somewhat similar to that of the north of Finland, and where, also, Icelandic moss is found in great profusion. A Norwegian from Tromsö has offered his assistance for the carrying out of this plan.

A CORRESPONDENT from Orbetello in Tuscany writes to us under date September 9:—"Yesterday, being the 'Festa della Natività,' was celebrated here in a manner which, being altogether peculiar to the town, may not be without interest. Soon after vespers a live goose was suspended (head downwards) by a cord stretched across the street from opposite windows, near the 'Chiesa San Guiseppe,' and five or six 'Pastori' and 'Capocci,' or mounted shepherds and bailiffs of the neighbourhood, rode past at full gallop and endeavoured to pull its head off, in which humane attempt they succeeded after half-an-hour's sport (?). The men are excellent rough riders, and showed some good horsemanship while using both hands in attempting to decapitate the goose. They afterwards dined together, the poor goose forming 'la pièce de resistance,' and then separated and went to their homes in a state of great good-humour."

THE best sign that Naples is no longer to be a capital town is the dissolution of Rothschild's house at this place. Henceforth the firm will be represented only by offices at Frankfort, Vienna, Paris, and London.

AMONG late Spanish publications, we may mention "Cuentos Mentiras y Exagerationes Andaluzas, escritas en verso," por D. Ramon Franquelo, aumentados con los recuerdos de Andalucia.

M. HARTZENBUSCH, known for his critical labours on the texts of Calderon and Lope de Vega, has just revised the text of "Don Quixote," making use of the early editions published during the lifetime of Cervantes, and of some curious and valuable manuscripts in the Escurial and in the National Library of Madrid. M. Rivadeneyra is printing two editions of this revised text, by subscription, one in 8vo. and the other in 32mo., at Argamasilla de Alba, in the Casa de Medrano, the prison in which Cervantes wrote the book, which, for the purpose of printing these editions of "Don Quixote," has been, for the time, converted into a printing-office. A sovereign will secure a copy of the smaller edition. The price of the larger, of which only 300 copies are struck off, has not yet been fixed.

SPANISH papers contain the following details on the production of gold in Mexico, from 1690 to our days. In 1690 the Mexican mint issued piastres for five millions; in 1700 for seven millions; from 1700 to 1800, the quantity of gold coined increased progressively every year, and reached the figure of twenty-five millions. It then decreased: in 1810 it was reduced to seventeen millions; in 1817 it had fallen to half-a-million in all. It rose again, in 1852, to two and a half millions, and in 1860 to nearly four—that is, less than in 1690.

A NEW Polish journal of jurisprudence is being issued at Cracow by the Professors of the Juridic Faculty of the Jagellonian University. It is to be a monthly, and to contain papers on law (chiefly Austrian), its history and philosophy; also, reviews of juridical works, &c.

THE new statute for Russian Universities, which was inaugurated on the 1st of September, contains fewer liberal reforms than had been anticipated. The supreme superintendence is in the hands of the Curators; but the authority of the Rector and the University Council has been enlarged, and a new institution—a University Tribunal, formed of three Professors—has been added. Outside the University, the students are under the general police authorities. Wealthy students have to pay, annually, fifty rubles in St. Petersburg, at other universities forty, as a honorarium for their instruction. The salaries of the ordinary professors have been increased to 3000 rubles, that of extraordinary to 2000. The adjuncts are to be replaced by private docents. Every University consists of three Faculties; but in St. Petersburg the place of the Medical Faculty is taken by a Faculty of Oriental Languages and Literature.

THE cataloguing of the numerous public libraries at Constantinople progresses rapidly. The number of MSS. which in this way will, for the first time, be described properly is estimated at more than a million. Unfortunately, a great number of these treasures, having for a long time been kept in damp places, are either largely or partly destroyed. It is also much to be regretted that none of the works of the first period of the Byzantine literature, the finding of which had been confidently looked forward to, have hitherto been found. There is no doubt that what there was of this kind has been pitilessly destroyed. The works now existing are written either exclusively in Arabic, or in languages of the same family. Properly placed, they bid fair to form the greatest Oriental collection in existence; and there is hardly a doubt that Ahmed Vafix Effendi's proposal to bring all these treasures under one roof, and to make them accessible to students, will be carried out, spite of the fierce opposition which it had to encounter at first. A beginning has already been made by the placing of 40,000 good European works from Il-Hami-Pashi's library in the Dar al Fanum (University); and it is to be hoped that worthy National Library will soon be formed around this nucleus.

A NEW Hebrew paper was started at Jerusalem a few months ago. The heading, "Halbanon," "the Lebanon," is printed in three different kinds of characters—Hebrew, Arabic, and Latin. At present the paper will be issued only once a month—on New Moon's Day. The first part of the publication contains political and other news from Jerusalem, from Asiatic and European countries. The second, however, is of a purely literary character, and bears the heading, "Honour of Lebanon." The first portion is printed in Hebrew-square, the second in the so-called "Rashi" types. As editors are mentioned Messrs. J. Bril, M. Cohen, and J. M. Bram. At the end of the paper the following direction is given: "H. J. Bril, Buchdruker [*sic*] in Jerusalem, Palestine"—half German, half English or French. The price is fixed at 2 thalers, 16 groschen, for Germany, and 44 piastres for Turkey. Its principle is that of moderate progress, chiefly advocating the spread of "European culture" in Palestine, and defiance of the higher orthodox party. Of special interest is, in the present number, the news from Arabia and Egypt on the history and the state of the Jews there, from the pen of correspondents at Aden and Alexandria.

CORRESPONDENCE.

(Anonymous Communications cannot be inserted.)

CÆSAR'S LANDING.

To the Editor of THE READER.

SIR,—In the *Athenæum* of September 5, Mr. Airy records his "undoubting conviction that Pevensey Bay was the place of Cæsar's landing." He also records his "unaltered opinion that Cæsar's statement of the circumstances of the voyage agrees well with a passage from the Somme to a point west of Hastings, and does not agree with any other passage which has been assigned for it." Yet Cæsar estimates the length of his passage at thirty Roman miles; and also says that he chose the shortest passage from Gallia to Britain. So far there is no agreement between Cæsar and Mr. Airy's interpretation of him.

Mr. Airy gives a new interpretation to the passage in which Strabo (p. 199, ed. Casaub.) speaks of Cæsar's invasions. The only direct evidence about these invasions is in Cæsar, whose work Strabo had seen; and he also used the writings of Asinius Pollio, which he quotes in his description of Gallia. Strabo's secondary evidence cannot decide the matter, but we shall see what he says.

Strabo then says (p. 199), "There are four passages which are generally used from the mainland to the island, and these are from the outlets of the Rhine, the Seine, the Loire, and the Garonne." He does not mention a passage from the aestuary of the Somme. He continues thus: "But those who pass from the parts about the Rhine do not sail from the outlets of that river, but from the country of the Morini, who border on the Menapii; and it is they (the Morini) who possess the Itium, which the deified Cæsar used as his ship-station when he crossed to the island. He set sail in the night, and on the next day, about the fourth hour, he arrived on the coast, having made a course of 320 stadia." Strabo, therefore, supposed Itium to be a place in the possession of the Morini. Mr. Airy says that this passage of Strabo "appears most distinctly to imply that Strabo understood Cæsar to say that the Portus Itius was external to the country of the Morini." Thus two opposite conclusions are drawn from the same Greek text.

The words on which the difference of interpretation turns are these:—*ἀπὸ τῶν ὁμορούντων τοῖς Μεναπίοις Μορινῶν, παρ' οἷς ἐστι καὶ τὸ Ἴτιον ᾧ ἐχρήσατο ναυσταθμῷ Καῖσαρ ὁ θεός*, &c. Mr. Airy interprets these words thus: "near to whom (the Morini) is the Itian port." According to this version, Strabo says that the Itium is near the Morini, and he does not say in what country it is. As Strabo has only mentioned the Morini and the Menapii, the conclusion from this interpretation should be that the Itium is in the country of the Menapii, who were north of the Morini. But Mr. Airy falsely concludes, from his own version, that the Itium was in some country not named, and south of the Morini.

Mr. Airy agrees with Dr. Guest "that the emphatic *καὶ* absolutely distinguishes the Itian port from the mercantile port mentioned in Strabo's preceding sentence." This word *καὶ* often misleads critics. Strabo has not mentioned a mercantile port in the preceding sentence. He says that people sail from the country of the Morini; and of course it is implied that there was a place to sail from; and, as he has told us the position of the three other ports, it is consistent that he should tell us the name of the fourth; and there is the more reason for this, because he says that traders did not sail from the aestuary of the Rhine, as they did from the aestuaries of the three other large rivers. The words *καὶ τὸ Ἴτιον* refer to *Μορινῶν*, and they tell us the name of the place which is implied in the previous words. They do not, as Mr. Airy supposes, introduce another place to our notice in addition to a place implied, which has not been named.

This use of *καὶ*, particularly in clauses which begin with a relative, as *παρ' οἷς*, is common in Greek writers—Thucydides, for instance; and it occurs in Strabo. The purpose of *καὶ*, when it is so used, is to mark emphatically some thing or circumstance which follows it, and not a thing or circumstance in addition to one which has been mentioned.

If we mistranslate *καὶ* in this passage by the word "also," we shall have two ports mentioned instead of one; but *παρ' οἷς* will still mean that the Morini had the Itium.

The ordinary use of *παρὰ* with a dative is plain. When Strabo speaks of a town on a river, he sometimes uses *παρὰ* with a dative. But I know no examples in Strabo, nor elsewhere, of *παρὰ* with a dative being used to express that a place is in some country, the name of which is not given, and near a country, the name of which is given. Nor, if it should be said in what country the place is, would a geographer define its position also by the help of *παρὰ*, and the name of a country in which it is not.

Mr. Airy says that, if Strabo intended to say that Itium was in the country of the Morini, he would have used the preposition *ἐν* (in) and not *παρὰ*. We know that he could have used *ἐν*, if he chose, because he often does use it to indicate that a place is in a country. But he also uses *παρὰ*, when he has a reason for using it. He says (p. 199) that the Petrocorii and Bituriges Cubi possess iron mines; the Cadurci possess linen manufactures; and the Ruteni possess silver mines. In all these cases he uses *παρὰ* and the verb *ἐστί* with the dative of the proper names, as he does in the passage about the Itium. He adds, "and the Gabali also have (*ἔχουσι*) silver mines:" and here he varies the expression, and uses *ἔχουσι* in the same sense as *παρὰ* with the dative. I know the objection that Mr. Airy may make to this passage, as proof of the correctness of my interpretation of the passage about the Itium, and therefore I add one more example from Strabo. He says (p. 339), when he is speaking of the three places in the Peloponnesus, which were named Pylos, that the inhabitants of Coele Elis claimed for their Pylos (*τῷ παρ' αὐτοῖς Πύλῳ*) the honour of being Nestor's Pylos.

Mr. Airy considers his inferences from certain passages of Cæsar "as incontrovertible, and that the Portus Itius was certainly exterior to the country of the Morini." An examination of Cæsar would occupy some space; and any man who chooses may do it for himself. If there is any possibility of giving two meanings to Cæsar it is certain that two meanings will be given, and every man will stick to his own. Mr. Airy says that "Cæsar nowhere states that the passage from the Portus Itius was the shortest." It is true that he does not state this in direct terms, but still he does say it. He states (iv. 21) that he marched into the country of the Morini, because the passage from that country to Britain was the shortest. If any man will dispute about the meaning of "in Morinos proficiscitur," because these words (iv. 21) might possibly express only the direction of his march and not the termination, he may compare the use of the same word in vii. 5, 6, and 8. As the passage from the Morini was the shortest, Cæsar ordered all his vessels to come to the country of the Morini; and we conclude that he sailed from the country to which the vessels came. He does not state the name of the place from which he sailed on the first voyage. On the occasion of his second invasion, he says (v. 2.) that he ordered all his ships to come to Portus Itius, "from which port he had found the passage to Britain the most convenient—a transit (*transmissum*) of thirty miles from the mainland." A German concludes from this that Cæsar did not sail from the Itius on his first invasion. We conclude that he did, and also that Cæsar means to say that the passage from the Itius to Britain was the shortest.

There is a passage (iv. 38) about Cæsar sending Labienus, with the legions that he had brought back from Britain, "against those of the Morini who had rebelled." This passage may be misunderstood, unless we observe the addition of the words "who had rebelled."

The matter is reducible to a small compass. If Cæsar tells the truth when he says that he made the shortest passage to Britain, he did not sail from the Somme. He sailed from some part of the French coast between Boulogne and Calais, and he came to anchor somewhere on the opposite coast of Kent. The question is which way did he go after leaving his anchorage: and that is all. If his narrative is false, we do not know anything about his voyage, and it is not worth the trouble of a guess.

GEORGE LONG.

NATURAL THEOLOGY.

To the Editor of THE READER.

DEAR SIR,—The defect in the argument of Paley and other writers on Natural Theology, noticed by your correspondent W. McC., is summed up, I apprehend, in the objection taken by Kant—that they educe proofs of the existence of an *architect* of the universe, but conclude to a *Creator*. They show the adaptation of means to certain ends. But whence come the means? They are produced, it is replied, by the infinite will of God. But why does this infinite will limit itself, and that so as to be hampered, as it apparently is, in its action by its own instruments? The Natural Theologians do not tell us why. I do not think we can learn by considerations drawn from any assumed predicates of "infinity." But, if we give up all attempts to define the unknown, and are content to infer the action of the Divine Will in nature from the analogy of the only power of free will known to us—namely, the will exercised in thought—the difficulty vanishes. The primary act of this free will is to limit itself, by producing thoughts standing in necessary relations. Now scientific research shows that to these thoughts the elemental forces of nature correspond. Hence the necessity, visible in nature, and causing her apparent imperfections, instead of excluding the conception of a free creative will, becomes a proof of its presence, and gives to the arguments of Natural Theology, drawn from the use made of these necessary elements, the footing they require.

I add, because the writer of the article whence the passage cited by your correspondent is taken does not appear to have perceived it, that this is the argument running through the work on the "Analogy of Thought and Nature" reviewed by him.

Yours faithfully,

E. V. N.

"LANGUAGE NO TEST OF RACE."

To the Editor of THE READER.

SIR,—In page 293 of your last number Dr. James Hunt is reported to have said before the British Association that "language is no test of race;" and "that language must be utterly discarded as the first principle of anthropological classification." Other periodicals inform us that, in the same Section, Mr. R. S. Charnock also said just the same thing.

No one more thoroughly agrees with these assertions than myself; but, without presumption, I may mention that precisely these same doctrines were maintained at length by me before the British Association at Leeds, as early as 1858, in a paper entitled "Language no Test of Race"—a very meagre outline of which is given in their transactions for that year. My line of argument was that there could hardly be a more fallacious criticism of the extraction of a nation than the language which, in historic times, it is found to speak; because, in the great majority of cases, where we can compare the ethnological and the philological history of a people, these are found to be irreconcilably at variance. I referred to the grave misgivings which such eminent philologists as Niebuhr, Hincks (and I may now add Max Müller, in Bunsen's "Philosophy of History"), had expressed as to the general coincidence of physical origin and national language; and I endeavoured to allay the opposition which these views excited, by pointing out that, if language must be abandoned as an ethnological test, it still possessed a value which was quite unsuspected as a sociological index. There, I believe, is the difference between my treatment of the question and that recently pursued at Newcastle, that, while the promoters of the latter method merely discredit language as a principle of anthropological classification, and so seem to annihilate its importance in relation to the history of mankind, I proceeded to show what identity or similarity of language between two nations does typify, and thence to calculate the real value of philology to the student of humanity.

Now that public attention seems to be drawn to the question, I shall, if possible, take an early opportunity of developing my own views more fully. But my former results were obtained quite independently; and I believe I may claim to have been, at least in England, the first to propound that "Language is no Test of Race," and to recommend its absolute rejection as an ethnological criterion.

I am, Sir, your obedient Servant,

G. C. GELDART.

Sept. 14th, 1863.

SCIENCE.

THE BRITISH ASSOCIATION AT NEWCASTLE.

SECTIONAL REPORTS (*continued*).

SECTION A.

On the Newcastle Time-gun. By Professor C. Piazzi Smyth, Astronomer-Royal for Scotland.—After referring to the exertions of the British Association from its earliest years to obtain accurate time-signals, and to many efforts in the same direction by citizens of Newcastle, the author traced the gradual rise of the time-ball system, from its origin by Captain Wauchope, R.N. who wrote no less than six letters before the official inertia could be overcome, to its full improvement, at Greenwich, under the present Astronomer-Royal, who introduced the "electric-trigger" and "clock-drop" improvements, which substituted for the old "bundle of a ball," made of tarred canvas hoops dropped by hand, a much heavier one, giving time absolutely, and checked in its flight by a column of compressed air, which brought it up and prevented damage. These arrangements, which have worthily transferred the subject from Section G to Section A, have opened up a possibility of accuracy and certainty, as well as a great extension in the distance which might intervene between the observatory and the signalling apparatus; and under this improved system time-balls are daily dropped from Greenwich, at Deal and Portsmouth. One, for some time, was dropped at Liverpool from Greenwich; but the distance was found too great, and Mr. Hartnup now controls it from the Liverpool Observatory. The Royal Observatory of Edinburgh began a time-ball service, on the Greenwich system, in 1852, a time-ball being placed on the Nelson monument; but, finding that this did not satisfy all the requirements of the locality, a time-*gun* was, in 1861, regulated by the same species of electric influence from the Edinburgh Observatory, which controls the drop of the time-ball. The result of the comparison of the two systems, which have now been going on in Edinburgh for three years, has been eminently in favour of the gun, which, besides all its peculiar advantages as an audible signal, available in all weathers, has been found to form a *visible* signal also, more easily seen at a great distance than the time-ball, and constituting a more sudden, instantaneous, and unmistakable signal than the gradual descent of the ball. The chief merit of bringing about the establishment of a time-gun in Newcastle-upon-Tyne was attributed to Mr. N. J. Holmes, engineer of the Universal Private Telegraph Company, although the subject of correct time occupied the attention of Mr. Reid of that town in 1845, and also of Mr. Sopwith, who, singularly enough, suggested that a big gun should be fired off every Monday. Most important service has been rendered by the Electric and International Telegraph Company, who, when appealed to, at once expressed themselves most ready to lend the use of their "through-wire," extending uninterruptedly between Edinburgh and Newcastle, a distance of 120 miles; they also most liberally, and at their own expense, established local wires to connect one end of their wire with the Royal Observatory, Edinburgh, and the other with the office of the Universal Private Telegraph Company in Newcastle. Here, as the Edinburgh current is not strong enough of itself to fire the charge, are stationed Professor Wheatstone's magneto-electric exploders, the most convenient and powerful electric means of exploding distant charges of gunpowder that have ever yet been invented. The strong current from these instruments is liberated by the galvanic signal of the corrected clock of the Edinburgh Observatory and produces ignition of the charge in the gun on the old Castle of Newcastle, and also that of a still larger gun on the Ballast Hill of North Shields. The Edinburgh current is still further transmitted to Sunderland, where it liberates another exploder current for a gun established in that town. Three guns are thus fired daily in the neighbourhood of Newcastle by the electric current from the Edinburgh Observatory. It has been found that the several small retarding influences experienced by the current in traversing the distance of 120 miles and securing the explosion of the guns amount to less than the one-tenth part of a second, and to eliminate this the governing clock at Edinburgh is made to send the current too soon by that amount. Professor Smyth also stated that arrangements are now almost complete for firing two guns in Glasgow and Greenock by electric signal from Edinburgh, making in all six guns fired from that observatory, which thus may justly claim to be the scientific and chronometric centre of North Britain.

On a Printing Telegraph. By Professor D. E. Hughes.—This instrument requires but one electrical wave for each letter, whereas for the Morse an average of four waves is required for each letter, and the dial instrument requires seven. There are twenty-eight keys, like the keys of a piano, each corresponding to a letter or mark—as, say, a full-stop, or a number—at pleasure. When one of the keys corresponding to a letter is depressed, this brings a detent in contact with a pin corresponding to that letter on the circumference of a uniformly revolving type-wheel; stops it, and at the same time sends an electric wave to the distant station, which, by an electro-magnet detaching a similar detent, stops the same letter for the instant, and, by a revolving cam brought up, presses the paper against the type, the impression of which is thus taken at the distant station. The rising of the detent by the key rising to its place simultaneously stops the electric current, and each wheel again starts into motion at the same letter, as they had each been stopped exactly at the same letter; and so letter after letter is printed nearly as fast as the keys of a pianoforte can be moved. The chief mechanical feature of this machine is the almost mathematical synchronism of the two type-wheels, continuously revolving—one at the transmitting, the other at the distant receiving station—any little difference that may accidentally occur being corrected by the machine itself; this exact synchronism between the two type-wheels is absolutely necessary. Approximate synchronism is obtained by the adjustment of two vibrating springs in unison—the perfect synchronism being obtained by a small correction, produced, as each letter is printed, by the very act of printing. The type-wheel is either hastened or retarded, as may be required, to bring the letter truly opposite the printing pad. The means by which the machine corrects itself at each letter, or at the commencement of work, is by means of a correcting cam—a solid wedge, pushed down into a similar hollow wedge—one on the driving part, the other on the arbour of the wheel. The paper to be printed on is coiled on a reel, and is drawn forward by the machine, and pressed up against the letter to be printed by the electric wave that brings the required letter or number to its place at the under side of the revolving wheel. A special value in working submarine cables is claimed for this instrument, the following rates of speed having been obtained in different lengths—

Atlantic cable	.	.	2500 miles,	4	words per minute.
Red Sea	do.	.	2000 „	6	„
„	do.	.	1000 „	10	„
„	do.	.	500 „	24	„

On Bonelli's Typo-Electric Telegraph. By Mr. Henry Cook.—The author, after tracing the progress of electric telegraphy, stated that at this moment three new systems, differing absolutely from each other, but each possessing undeniable merit, are before us. The first is the printing telegraph of Mr. Hughes, a marvel of mechanical ingenuity. The second is the Pantelegraph of the Abbé Caselli, who, not content with the transmission of autographic communications, will send, with admirable precision, a portrait. This is accomplished by the aid of two pendulums, having a movement absolutely synchronous. One of these pendulums carries a pen or pencil of fine platinum wire (in connexion with the line and the line battery) over the surface of the despatch or drawing previously written or executed in insulating ink upon a metallic paper. The other, at the corresponding station, carries an iron pencil, likewise in connexion with the line, over a paper prepared with a solution of the yellow cyanide of potassium. The electrical circuits are so disposed that, when the platinum point in its passage over the original writing or drawing touches the metallic surface of the paper, there is no emission of current along the line; while, on the other hand, when the point touches the insulating ink, an emission of current takes place, and the iron point passing at the other end of the line over the prepared paper leaves upon it a blue mark. The movement of the two pendulums being precisely equal, the reproduction of the drawing or despatch is absolutely exact. The third is the type printing telegraph of the Chevalier Gaetano Bonelli, the former director of telegraphs in Italy, and the inventor, among other beautiful applications of electricity, of the electric loom. It is to Mons. Bonelli that we are now indebted for the bold idea of uniting the science of electricity with the art of Guttenberg, and of practically demonstrating that an ordinary typographic composition, fit for local use, may be unerringly reproduced at almost any distance. From this idea naturally arose the conception of converting the telegraphic stations upon the main lines into so many type-setting *ateliers*, of suppressing altogether every kind of delicate mechanism, of putting aside conventional alphabets—those pregnant sources of error; in a word, of reducing telegraphic science to a simple *métier*, within the reach of the most ordinary intelligence. The author then remarked upon the simplicity, regularity, and economy of time which Bonelli's system offers as compared with others. Independence of synchronic movement, or elaborate clock-work, freedom from all delicacy in the mechanical detail, and the substitution of the most absolute simplicity in the place of that which, until now, demanded a special knowledge to keep the machines in working order, are among the practical advantages obtained; while, on the other hand, a rapidity and certainty, never even hoped for, is ensured. The principle features of the new system are two tables in cast iron, placed inversely to each other at the corresponding stations, and each provided with a miniature railway, over which run two waggons, one carrying the type-set message, the other the paper, chemically prepared with nitrate of manganese, and two combs, formed by the extremities of the wires of the line, one of which touches the type at one station, while the other passes over the prepared paper at the other—a spring-catch to each of the waggons setting them free to move by the closing of an electrical current. Neither on short circuit nor at a distance has the slightest difficulty in working the Bonelli machine been experienced—a well-considered system of counter-currents having completely annihilated the inconveniences which, from the time of Bain to the present moment, have been inevitable in electro-chemical telegraphy. Caselli was the first to conquer the difficulties which rendered the chemical process useless at a distance. Ten type-setters, under Bonelli's system, can compose at least 300 despatches per hour, and these may be transmitted

in less than that time. As regards rapidity, the author stated that Bonelli's system has the advantage of as three to one over the system universally adopted, and has further an immense superiority, inasmuch as that all errors are avoided, and the necessity of repeating figures and proper names is entirely done away with. It has been asserted that an unattainable identity in the electrical condition of the five wires is absolutely indispensable to the well working of the system. The badness of the line between Manchester and Liverpool has proved the contrary, it having been demonstrated by actual practice that a variation of from 40° to 50° in the amount of loss to earth does not make the slightest appreciable difference in the legibility of the printing.

On a New Form of Syren. By Mr. Ladd.—A disk of cardboard is perforated with 1682 holes, apportioned into twenty-four concentric circles, the fifteen interior ones being divided into regular, and the remainder into irregular, intervals. The former are divided in the following proportions:—For every two holes in the first circle (counting from the centre) there are three in the 2nd, 4 in the 3rd, 5 in the 4th, 6 in the 5th, 8 in the 6th, 10 in the 7th, 12 in the 8th, 16 in the 9th, 20 in the 10th, 24 in the 11th, 32 in the 12th, 40 in the 13th, 48 in the 14th, and 64 in the 15th. If with a small tube you blow into these circles, whilst the disk is in rapid rotation, a series of musical notes will be obtained, allied to each other in the relative proportion of the numbers. Looking at the outer portion of the disk, lines of holes are observed radiating from the centre, and dividing the disk into twenty-four equal parts; and, if the other holes were stopped, each of these rings would produce a single sound, the same as the 6th row of the inner series. This note will form the fundamental of all the harmonics. If we take a point in the first of the external rings, and, starting from it, with a pair of compasses repeat the distance between it and the first intermediate hole five times, it will correspond with four of the fundamental spaces, and if a single jet of air is forced through these holes whilst the disk is rotating, the idea conveyed to the mind will be precisely the same as if two separate notes were sounded together—the two notes being a fundamental and its third, the proportions of the vibrations being as 5 : 4. The second row is divided in the ratio of 4 : 3—this will give a fundamental and its 4th (or sub-dominant); the 3rd row is divided as 3 : 2, giving the fundamental and its 5th (or dominant); the 4th row, divided as 5 : 3, gives a fundamental and its 6th; the fifth row is as 7 : 4—this giving a fundamental and flat 7th; the 6th row has a combination of 4 holes, in the proportion of 6 : 5 : 4 : 3—this will give a perfect chord of four notes; the 7th row has four holes, in the proportion of 8 : 6 : 5 : 4—this will give a perfect cord with octave of the fundamental; the 8th row is divided in the proportion of 5 : 4 : 3, giving a perfect major triad with inverted 5th; and the last row is divided in the proportion of 6 : 5 : 4, which forms a perfect major triad. The exact intonation of the notes given out by the inner circles, and the exquisite harmonies produced by the outer ones, are certainly astonishing.

On an Acoustic Telegraph. By Mr. Ladd.—This instrument consists essentially of two distinct pieces of apparatus. That for transmitting the the signal has a small mouth-piece. On the right hand side there is a finger-key, forming part of the circuit, and an electro-magnet, with a vibrating armature and binding-screw to connect with one of the line wires. Within a case, under a glass cover, is an elastic membrane, in the centre of which is fixed a platinum plate in connexion with the finger-key. A light piece of angular metal, resting on three pins, is so placed that the pin at the angle rests on the plate in the centre of the membrane, the other two resting in cups on its edge, so as to allow of free motion on the points. In the body of the receiver-box is suspended a soft iron core, surrounded by a coil of silk-covered wire, one end of which is in connexion with the finger-key and the other with a binding-screw. The method of producing sound in the receiving instrument depends upon the fact that, at the moment of magnetizing or demagnetizing a piece of iron, there is an alteration in the arrangement of the particles which gives rise to a slight ticking noise. Having connected the transmitter, by means of an insulated wire, with the receiver, and the binding-screws having been brought in connexion with a battery of three or four elements, if the finger-key on the transmitter be pressed the person at the receiving station hears the ticking noise; and, as all musical notes are the production of pulsations at regular intervals, we have simply to find some means of making and breaking contact a number of times equal to the pulsations of the note to be conveyed. This is done by the elastic membrane. The operator places his mouth to the tube in front of the instrument and sings a note, when immediately the membrane begins vibrating in accordance with the note sounded, and at each vibration breaks contact between the pin and plate in its centre. This, forming part of the circuit, causes the iron core in the receiving instrument to be magnetized and demagnetized a number of times equal to the number of vibrations of the membrane, and so conveys to the receiver an impression of a musical sound. The finger-keys and small magnet at the sides of the instruments are for the purpose of varying the methods of communication by the combination of single sounds, and can also be used with the other parts for the purpose of regulating the lengths of the notes and dividing them into varying portions, so as to form a sound-alphabet somewhat similar to the signals written by Morse's telegraph.

Interim Report on the Vertical Motion of Currents of Air. By Professor Hennessy.—Although some work has been accomplished, the committee were not prepared with a report.

Report on Luminous Meteors. Mr. Glaisher read the report on behalf of the committee, which consists of James Glaisher, F.R.S., Robert P. Grey, F.G.S., E. W. Brayley, F.R.S., and Alexander S. Herschel, F.C.S.—In presenting their report, the committee draw attention to the marked advance in the number of coincident observations of meteors, regarding it as a most satisfactory proof of increased vigilance on the part of observers. To several meteors, of which accounts have been printed in previous reports, satisfactory tracks have been assigned, which were given in the form of an appendix. After a long detailed list, compiled with great care, of all the meteors observed, a considerable portion of the report was devoted to the August meteors, on which observations were made at Greenwich and Cambridge, and London, Portsmouth, and Hastings, and at several other places in the south and east of England, for the determination of the heights and velocities of the shooting stars of this epoch. The correspondences among the observations were numerous, and the five meteors of the following list were well situated for exact calculation. Here follows a table of the times and places of appearance, from which elements the following heights and velocities have been derived for these meteors:—

	Height at Appearance.	Height at Disappearance.	Velocity.
	miles.	*miles.*	*miles per hour.*
1	70	50	35
2	114	73	36
3	131	66	75
4	105	52	41
5	79	58	38

These meteors were all of planetary brilliancy, and the three paths of the first meteors, as given by observations at Cranford, London, and Hawkhurst, differ nowhere five miles from the mean adopted path. Meteor No. 2 was similar to the first, but less brilliant. Both were clear white, and appeared to sparkle with red scintillations in their flight, the first of them actually spanning the English Channel from shore to shore in three seconds of time. A globe replete with flame more brilliant than that of ordinary sheet-lights should be from four to five feet in diameter to dispense the powerful light of any of the above shooting stars. The stream attained its maximum between the hours of ten and twelve p.m. of the 10th August, and was comparatively insignificant on the previous and succeeding evenings. The occurrence of such calm conditions of the atmosphere as prevailed from the 8th to the 12th of August in the present year must be regarded as a rare contingency in the return of the shower; and a noticeable uniformity in the heights of disappearance of the bright meteors of nearly sixty miles above the earth appears to indicate that these aerial conditions are not without their influence in determining some of the characters of the display. The report is accompanied by carefully-prepared charts of the several radiant points and zeniths of the different stations.

Mr. Lowe stated the result of some observations which bore upon the subject. A short time ago there was a display of fireworks in Nottingham, about 2¾ miles from his observatory, and he availed himself of the opportunity to make observations, with the view of marking the difference between the view with the naked eye and the telescope. He was very much struck to find that the noise of the explosions, when they occurred high in the air, came so much more rapidly to him than at the ordinary velocity. Upon three consecutive nights he made observations on these explosions, and he found that the sound travelled towards him at a rate averaging from 2240 to 2275 feet to the second, with a temperature of from 50 to 60 degrees. In one instance of an ascending firework, where there was a number of small explosions, followed by a loud report, he heard the loud report before the small explosions. An instance strongly confirmatory of what occurred in the Arctic regions, where the report of a gun was heard at a distant station before Sir J. Ross's word of command to fire.

Dr. Akin remarked that the loud report might have been quicker from passing through the ice, while the voice would be carried through the air.

Mr. Glaisher remarked, that singularly enough some of the meteors observed at Greenwich and the other stations were noticed to differ very much in their colour at the different places, as if the atmosphere had something to do with it; he also stated that the balloon had occupied so much of his attention that the great labour of the committee had fallen upon Mr. Alex. Herschel, who was a most indefatigable labourer in the cause.

Section B.

Report by the Committee appointed to investigate some Improvements in Gun-Cotton.—This committee is composed of members of the chemical and mechanical Sections; and we have here to deal with the chemical part, which was read by Dr. Gladstone—the mechanical report, submitted to this Section by Mr. Scott Russell, was discussed in Section G, to which we therefore refer. The report commenced by alluding to the various products which, since the discovery by Schönbein, in 1846, of a method of chemical treatment by which cotton might be rendered explosive, have been brought forward under the name of "gun-cotton," "pyroxylin," "fulmi-cotton," "nitro-cellulose," &c., and mentioned especially the extensive series of experiments with gun-cotton carried on by the military and scientific authorities of France (recorded in Berthier's "Mémoire de l'Artillerie"). These experiments, however, led to a comparatively negative result, as far as its substitution for gunpowder was concerned; and only in Austria was the investigation continued, chiefly by Baron von Lenk, whose method of preparation differs considerably from the French one. From time to time accounts have reached England of its partial adoption in the Austrian service, though no explanation was afforded of the mode in which the difficulties previously experienced had been overcome, or the extent to which the attempts had been successful. The committee, however, are now in possession of the fullest information from two sources—Professor Abel, chemist to the War Department, and Baron W. von Lenk himself, a Major-General in the Austrian Artillery, and the inventor of the system by which gun-cotton is at length made practically available for military purposes. Professor Abel, by permission of the authorities, communicated to the committee the information given by the Austrian Government to our Government, and also the results of his own elaborate experiments. General von Lenk, on the invitation of the committee, and by permission of the Austrian Government, paid a visit to this country, to give every information in his power on the subject, and brought over drawings and samples from the Imperial factory. Mr. Whitworth has made experiments on the application of gun-cotton in mines, and has furnished Baron von Lenk with rifles, &c., for experiments, the results of which have not yet been received. The documents attached to the report give the evidence obtained. The following is a summary of the more important points:—As to the chemical nature of the material, Von Lenk's gun-cotton differs from the gun-cotton generally made in its complete conversion into a uniform chemical compound. It is well known to chemists that, when cotton is treated with mixtures of strong nitric and sulphuric acids, compounds may be obtained varying considerably in composition, though they all contain the elements of the nitric acid and are all explosive. The most complete combination (or product of substitution) is that described by Mr. Hadow as $C_{36}\,H_{21}\,(9\,NO_4)\,O_{36}$, which is identical with that termed by the Austrian chemists Trinitrocellulose, $C_{12}\,H_7\,(3\,NO_4)\,O_{10}$. This is of no use whatever for the making of collodion; but it is Von Lenk's gun-cotton, and he secures its production by several precautions, of which the most important are the cleansing and perfect desiccation of the cotton as a preliminary to its immersion in the acids, the employment of the

strongest acids attainable in commerce, the steeping of the cotton in a fresh strong mixture of the acids after its first immersion and consequent imperfect conversion into gun-cotton, the continuance of this steeping for forty-eight hours. Equally necessary is the thorough purification of the gun-cotton so produced from every trace of free acid. This is secured by its being washed in a stream of water for several weeks. These prolonged processes are absolutely necessary; for each cotton fibre is a long narrow tube, often twisted, and even doubled up, and the acid has first to penetrate into the very furthest depths of these tubes, and afterwards has to be soaked out of them. It seems mainly from the want of these precautions that the French were not successful. From the evidence before the committee it appears that this nitro compound, when thoroughly free from acid, is not liable to some of the objections which have been urged against that mixture of compounds usually experimented upon as gun-cotton. It seems to have a marked advantage in stability over all other forms of gun-cotton that have been proposed. It has been kept unaltered for fifteen years. It does not become ignited till raised to a temperature of at least 136° C. (277° Fahr.); it is but slightly hygroscopic, and, when exploded in a confined space, is almost entirely free from ash. There is one part of the process not yet alluded to, and the value of which is more open to doubt—the treatment of the gun-cotton with a solution of silicate of potash, commonly called water-glass. Professor Abel and the Austrian chemists think lightly of it; but Von Lenk considers that the amount of silica set free on the cotton by the carbonic acid of the atmosphere is really of service in retarding the combustion. He adds, that some of the gun-cotton made at the Imperial factory has not been silicated at all, and some imperfectly; but, when the process has been thoroughly performed, he finds that the gun-cotton has increased permanently about three per cent. in weight. One of the samples of gun-cotton left by the General, on being analyzed, was found to give 2·33 per cent. of ash, mostly silica. Much apprehension has been felt about the effect of the gases produced by the explosion of gun-cotton. It has been stated that both nitrous fumes and prussic acid are among these gases, and that the one would corrode the gun and the other poison the artillerymen. Now, though it is true that from some kinds of gun-cotton, or by some methods of decomposition, one or both of these gases may be produced, the results of the explosion of the Austrian gun-cotton without access of air are found by Karolys to contain neither of them, but to consist of nitrogen, carbonic acid, carbonic oxide, water, and a little hydrogen and light carburetted hydrogen. These are comparatively innocuous; and it is distinctly in evidence that, practically, the gun is less injured by repeated charges of gun-cotton than of gunpowder, and that the men in casemates suffer less from its fumes. It seems a disadvantage of this material as compared with gunpowder that it explodes at a temperature of 277° Fahr.; but against the greater liability to accidents from this cause may be set the almost impossibility of explosion during the process of manufacture, since the gun-cotton is always immersed in liquid, except in the final drying, and that may be done even at the temperature of the air. Again, if it should be considered advisable at any time, it may be stored in water, and only dried in small quantities as required for use. The fact that gun-cotton is not injured by damp like gunpowder, is, indeed, one of its recommendations; while a still more important chemical advantage which it possesses arises from its being perfectly resolved into gases on explosion; so that there is no smoke to obscure the sight of the soldier who is firing or to point out his position to the enemy, and no residuum left in the gun, to be got rid of before another charge can be introduced.

Professor Abel gave a description of the Austrian system of manufacture, as communicated to the Government of this country by the Government of Austria, and as carried out at the Imperial establishment at Hirtenberg, near Vienna. We have already mentioned that the importance of a full inquiry into this matter is to be suggested to the Government, to whom copies of the combined report will be sent.

On Disinfectants. By Mr. H. B. Condy, F.C.S.—It was remarked by the writer that the idea of artificial disinfection by chemical means was not opposed to the operations of nature, since the action of the air in overcoming the foulness which is inseparable from the congregating together of men in dwellings is explainable only by the laws of chemistry. In studying, consequently, the best means of seconding nature in her efforts for disposing of the waste products of organic life, we had only to copy her admirable processes, in order to arrive at the most perfect results. The researches of recent times on the composition and economy of the atmosphere pointed clearly to oxygen, and especially to active or ozonic oxygen, as the chief means by which natural disinfection is accomplished. There were two classes of circumstances in which the auxiliary aid of disinfectants is very frequently required to overcome unwholesome influences—viz. (1.), against the deleterious emanations which generally proceed from those labouring under disease, and more particularly when such disease is of a contagious nature; (2.) against the taint of organic decomposition. In both these cases the chemical objects to be kept in view were substantially the same. The infective material in either case is supposed to be an organic compound, declining by successive transformations from a highly complex form towards that state of ultimate repose which belongs to complete oxidation. Its dangerous qualities are dependent on its condition while passing through those steps of transition during which it acted after the manner of a ferment. Disinfectants were of two classes: (1.) those which, by fixing the organic matter in a form unfavourable to oxidation, thus reduce to the utmost its tendency to undergo chemical change, and which are more properly designated *antiseptics*; (2.) those which more or less rapidly break up the organic matter by producing its oxidation and conversion into imputrifiable products, and which alone are properly designated *true disinfectants*. The advantages possessed by the preparations indicated by the author were thus summed up:—They had no smell whatever of their own, gave off no odorous gas during their operation, and when diluted for use were devoid of perceptible action, except on offensive matter; they were thoroughly efficient and permanent in their effects, disinfecting as well as deodorizing; perfectly safe to use, because not poisonous; not mistakable for other substances on account of their characteristic colours; capable of being regulated as to quantities required by the depth of colour of their solutions; and applicable in a great number of cases for which no other disinfecting agents can be employed.

Dr. Paul remarked that the substance which Mr. Condy had introduced as a disinfectant was one of a class that not long ago was known only in the laboratory, and which as a disinfectant possessed characters that rendered it very advantageous. Among the many kinds of disinfectants hitherto employed, almost every one was liable to one or two very serious objections, being either offensive in their smell or poisonous. Chlorine and chloride of lime were both very efficacious, but at the same time very disagreeable. Carbolic acid, which has lately been applied in a most ingenious manner to the purpose of disinfection by Mr. McDougall and Dr. Smith, is not much less offensive. On the other hand, Sir W. Burnett's chloride of zinc, a most effective disinfectant, is highly poisonous; and within the last few months several cases of accidental poisoning have occurred in consequence of its having been used in mistake for solution of magnesia. But Condy's disinfectant possessed the merit of being entirely free from any smell, and being also innocuous.

On Chemical Manufactures. By Messrs. J. C. Stevenson, R. C. Clapham, and T. Richardson.—This was another paper on local manufactures, and one of great interest, giving in most cases a history of each manufacture dwelt upon, besides the sources of the raw materials used, and information of great practical importance. The following table will show the branches treated on, and the average annual quantity, price, and annual value of the raw materials used and finished products manufactured:—

RAW MATERIALS.

	TONS.	PRICE. £. s. d.	VALUE. £. s. d.
Sulphur (included as Pyrites)	72,800	0 10 0	109,200 0 0
Salt	90,000	0 15 0	67,500 0 0
Nitrate of soda	2,500	14 15 0	36,875 0 0
Chalk	144,000	0 2 6	18,000 0 0
Coals	323,000	0 3 9	64,562 10 0
Manganese	11,400	4 0 0	45,600 0 0
Rough Epsom salt	1,500	2 5 0	3,375 0 0
Magnesian limestone	700	0 3 6	122 10 0
French limestone	14,000	0 4 6	3,150 0 0
Resin	—	—	—
Tallow	—	—	—

Copper value not included.

FINISHED PRODUCTS.

	TONS.	PRICE. £. s. d.	VALUE. £. s. d.
Alkali	43,500	8 10 0	369,750 0 0
Crystals of soda	51,300	4 15 0	243,675 0 0
Bi-carbonate of soda	7,450	12 0 0	89,400 0 0
Caustic soda	580	18 0 0	10,480 0 0
Hyposulphite of soda	400	25 0 0	10,000 0 8
Oil of vitriol	6,440	6 0 0	38,640 0 0
Epsom salts	1,500	7 5 0	10,875 0 0
Hydrochloric acid	180,000	—	—
Sulphuric acid, used in the manufacture of soda	86,320	—	—
Bleaching powder	11,200	9 0 0	100,800 0 0
Soap	6,000	34 0 0	204,000 0 0
Yellow prussiate of potash	105	0 1 0	11,760 0 0
Red ditto	40	0 2 6	11,200 0 0
Alum	4,000	7 0 0	28,000 0 0
Carbonate of magnesia	250	30 0 0	7,500 0 0
Superphosphate of lime	15,000	5 0 0	75,000 0 0
Pearl hardening	2,000	10 0 0	20,000 0 0
Sulphate of iron	2,000	3 0 0	6,000 0 0
Venetian red	4,000	5 0 0	20,000 0 0
Sulphate of copper	100	35 0 0	3,500 0 0
Resin size	100	7 0 0	700 0 0
Lamp black	1,200	7 0 0	8,400 0 0
Grease	2,800	8 0 0	22,400 0 0
Cements	12,000	2 0 0	24,000 0 0

On Titanium in Iron. By Dr. Riley.—This metal, the author observed, appeared in small cubical crystals, and had long been observed in blast furnaces used for making the best gray iron. Titanium ought no longer to be considered one of the rarer elements, as it occurs very generally, and is a constituent of clay. Stourbridge bricks contained at least 1·05 per cent. of it. In mining shales as much as 3 or 4 per cent. have been traced. The object of the paper was to show that, under certain conditions, it formed a constituent part of pig-iron, and its presence appeared to have some beneficial effects in the manufacture of iron and steel, as it acted somewhat similarly to manganese.

On Salt of Baryta in Colliery Water. By Dr. Richardson.—The author stated that the water—clear as it issued from the shaft—rapidly deposited a solid matter, the analysis of which is as follows:—

Sulphate of Baryta	90·01
Sulphate of Lime	3·04
Peroxide of Iron	·30
Silica	2·65
Water	3·51
	90·51

The baryta most probably existed in the water in the form of hyposulphate, which, on absorbing oxygen from the air, becomes converted into the sulphate of baryta.

SECTION C.

On a Deposit of Sulphur in Corfu. By Professor Ansted, F.R.S.—Among the gypseous marls and marl-rocks, which are interstratified with the limestone axis of the island, many thin seams of native and nearly pure sulphur occur, from a quarter to half-an-inch in thickness. The surface of these bands presented a somewhat stellate appearance, allied to that in which wavellite mostly occurs. In one village the houses were built of this gypseous rock with sulphur bands, thus necessarily presenting a peculiarly yellow aspect. The island was, in common with its neighbours, subject to frequent seismological visitations, although the earthquake phenomena of the Ionian Islands seemed divisible into two distinct and unconnected series, two groups of movements acting independently of each other.

On the Metamorphic Origin of the Porphyritic Rocks of Charnwood Forest. By Professor Ansted, F.R.S.—The proposition of the author was that the whole of the so-called igneous rocks of the district were a series of metamorphosed sedimentary deposits, probably comparable with those of North Wales. The slates of Charnwood, with their contained rolled pebbles and faint traces of life-remains, alternated with rocks having the appearance of syenite, but which he regarded as of equally sedimentary origin.

Professor Phillips, while inclined to admit many rocks formerly called igneous within the pale of metamorphism, thought that more information was required before these syenitic and porphyritic rocks could be held with safety as having been derived from clays and sandy deposits. To the best of his belief no true gneiss or mica slates occurred in the Charnwood area; although the absence of dykes and masses of apparently intrusive rock placed them in a position to give one reason for assigning them a place in the metamorphic series.

Mr. Jukes, F.R.S., could not allow his belief in the igneous origin of many of the Charnwood

rocks to be shaken. He believed it was possible for a large intrusive mass, such as he regarded these porphyritic rocks to be, to protrude through other rocks without much or any alteration of their nature.

Professor Ansted, in reply, mentioned the existence at Birnum Wood, in the Charnwood area, of a small patch of gneiss lying between the syenite and the slate.

The President called attention to the new edition of Greenough's Geological Maps of England and Wales, exhibited by the Geological Society of London; and Mr. Mylne, F.R.S., described the geological and hydrographical features of a map compiled and exhibited by him. In this the water-sheds of England and of western Europe were laid down, and the sea-areas contoured into lines of depth. The tertiary and cretaceous areas, together with the coal-fields, were also mapped out, the whole being explanatory of the former geographical outlines of north-western Europe.

On the Laurentian Rocks in the Malvern Hills. By Dr. Harvey B. Holl, F.G.S.—The author considered the rocks forming the axis of the Malvern chain as hornblendic schists rather than syenites, denying also that they were of igneous origin. His conclusions were:—1. That the metamorphic rocks of the Malverns are probably of Laurentian age; 2. That these Laurentian rocks were above the sea-level during the period of the deposition of the Cambrian system; 3. That previous to or during the deposition of the Primordial Zone the range became depressed; 4. That subsequently to this the range was again elevated, and continued so until after the deposition of the Lower Llandovery rocks; 5. That the Upper Llandovery beds were deposited during a period of depression, which depression continued until after the deposition of the Middle Devonian series; that portion of the range which is between the Wind's Point and the Worcestershire Beacon being the last depressed; 6. That subsequently to the Middle Devonian period the range again became elevated, and continued so during the deposition of the Upper Devonian beds, the carboniferous limestone and millstone grit; 7. That this was again followed by gradual depression, during which the coal-measures, the Permian system, the trias and lias were deposited; 8. That the eruptions of trap-rock along the range of the Malverns belong to two distinct epochs—the one anterior, the other posterior, to the deposition of the Upper Llandovery beds; 9. That the age of the faulting of the Upper Silurian and Devonian strata on the western flanks of the range was after the close of the Middle Devonian period, and dependent on the upthrust of the crystalline rocks, which took place about that time, but that the age of the great longitudinal fault, on the eastern side of the range, was subsequent to that of the lias.

Professor Phillips defended the syenitic and granitic character of the Malvern rocks, and demurred to the assumed stratification of the central mass, preferring to regard it as composed of rocks of igneous origin, formed prior to the deposition of Cambrian and Silurian strata.

Sir R. I. Murchison expressed astonishment that these Malvernian rocks should be regarded as Laurentian gneiss by any geologist, and protested in an emphatic manner against the propositions of the author.

On the Equivalents of the Cleveland Ironstones in the West of England. By Charles Moore, F.G.S.—These rocks, with their contained ironstone bands, had been traced by the author from Lyme Regis to Yeovil and Bath. In mineral wealth they formed a marked contrast to those in the north of England; for, where the ore was rich enough to work, it was not thick enough, and *vice versâ*.

On the Organic Contents of the Lead Veins of Allenheads, and other Lead Veins of Yorkshire. By C. Moore, F.G.S.—The author, having in former papers called attention to the organisms he had met with in the mineral veins which traverse the carboniferous limestones of the west of England, had of late subjected those of Yorkshire to the same scrutiny. In certain veins and fissures in these, which crystallizations drawn from the rock had failed to completely fill, he had detected numerous organic remains washed into them by the action of later seas. The most remarkable of these was that of the New Rake vein, the clayey infilling of which was found to contain abundance of "Conodonts"—the small tooth and comb-like bodies from the Upper Silurian bone-beds, which Dr. Pander had described as fish-teeth, but which Dr. Harley has since established to be of crustacean origin.

Report on the Distribution of Organic Remains of the North Staffordshire Coal-field. By Mr. Molineux.—The coal-fields of this district are five in number, comprising an area of upwards of eighty square miles, containing forty-three workable seams of coal, of two feet and upwards in thickness, and twenty-two which may be regarded as of little or no commercial value, the whole constituting a solid mass of one hundred and seventy-five feet of coal. With these are associated eighteen beds of ironstone. The author proceeded to describe in detail the geographical situation, stratigraphical position, and physical condition of these coal-fields, together with their contained fossils, which comprised eighty species belonging to thirty-five genera. It was specially noted in the report, with reference to the time represented by these accumulations, that a "bone-bed," composed of scales of fishes and other organic remains, occurred on the upper surface of the majority of the seams both of coal and ironstone, which organic layer is in no case seen to penetrate into the body of the seam. In an addendum to the report, Professor Huxley described a new genus of carboniferous fishes, *Cycloptychius*, of which more than one species had been found by Mr. Molineux in the district.

On the Chronological Value of the Triassic Rocks of Devonshire. By Mr. Pengelly, F.R.S.—Hitherto geologists had taken the amount of sedimentation as the measure as well as the monument of the amount of denudation, the data being taken only from the ruin of the fabric. But this index, though reliable, was not the only one by which the measure of past time could be estimated. Close examination of the Triassic rocks proved that much of their material was of detrital origin, the re-disposed substance of older Triassic rocks. So great were the changes which could be traced within the era of the New Red Sandstone, that a consecutive series of events could be laid down; first, fissures and joints in older rocks were filled with red sand, a product of the period; then this sand became indurated into coherent and durable dikes, capable of being fissured and faulted without their sides falling in; next, longitudinal fissures became formed in these dikes, which afterwards became filled by a precipitation of carbonate of lime; transverse joints then became formed alike through the Triassic dikes and veins and the pre-Triassic rocks; next, the entire mass—rocks, dikes, and veins—was faulted by unequal movements, passing in an approximately horizontal direction; and lastly, the joints thus formed became filled with red sandy detritus, as in the first case, passing through those previously existing;—these two systems being distinguishable by well-defined walls and a marked difference of colour. It appeared probable that not only did these events take place within the era of the lower Trias, but within its sandstone division.

Mr. Pattison remarked upon the value of these observations in furnishing a natural measure of time. The author had shown that the New Red Sandstone, apparently so uninteresting a formation from its paucity of fossils, possessed a chronology of its own in a succession of physical events of varied and remarkable character.

Professor Ansted agreed with Mr. Pengelly that the age of the Trias was one of far greater duration, and included a more varied series of physical conditions than many geologists had been aware of.

A Help to the Identification of Fossil Bivalve Shells. By Mr. Seeley.—The author suggested that, if the number and characters of hinge-teeth possessed by these shells were written down in formulæ, similar to the plan in use for mammalian teeth, much aid in determining species, and also in grouping families of the mollusca, would be the result. Hinge-teeth, which were persistent in form, could be indicated by ordinary numerals, and variable teeth by accentuated numerals. In drawing out such a scheme care should be taken to note the position of the teeth, whether anterior or posterior to the umbo. He considered that the plan, if adopted, would simplify the definition of a genus.

On the Relations of the Cumberland Coal-field with the Red Sandstone. By W. Matthias Dunn, Government Inspector of Coal-mines. — The author's practical investigations in the collieries of Ellenborough, Aspatria, and Crossby led him to consider that the main coal-field of the district yet remained untouched, as it had been downcast by faults beneath the red-sandstone rock, which he is inclined to regard as the superior stratum of the carboniferous system. Quoting several authorities in support of his opinion that the bottom of the basin would be found at and around Silloth Harbour, he pointed out the importance of determining the question, and described the trial sinkings now going on near Wetherall, and at the Aspatria Colliery.

Discussion upon this was postponed until after the reading of Sir R. Murchison's paper on the Permians.

On the recent Discovery of Gold near Bala Lake in Merionethshire. By Mr. Readwin. — After alluding to communications made at former meetings upon the subject of gold in Wales, the author described the extension of lodes of gold-bearing quartz into the Bala district, where, at Castell Carn Dochan, a remarkable quartz lode, resembling, in its specular dissemination of the gold, that of Clunes in Australia, is being worked.

Section D.

On Cinchona Cultivation. By Mr. C. R. Markham.—The author described the means by which cinchona had been successfully cultivated in India, and the conditions of climate favourable to its production.

On some Elucidations of the Geological History of North Africa, supplied by its Lacustrine Fauna. By the Rev. H. B. Tristram.—The laws of variation within certain limits of geographical distribution presented one of the most interesting of the yet unsolved problems of geology. As far as their present knowledge extended, it might be assumed by naturalists that, whatever those laws might be, the various groups of the animal creation were similarly operated upon within the same geographical limits. A great deal of interest had been excited in the division of the world into six creative centres, the first comprising Europe, North Africa, and through to Japan; the second, North America; the third, South America, the West India Islands, and Central America as far as Texas; the fourth, India; the fifth, South Africa; and the sixth, Australia; with certain outlying groups, as Madagascar and New Zealand. The ornithologist could tell at a glance to which form a bird belonged without any knowledge of the species before him, but simply from the types prevailing in different parts of the world; and, by a similar boundary line the terrestrial mollusk of North America differed from the terrestrial mollusk of this country. But to a far greater extent did this distinction exist in South America, South Africa, and India. While in districts of the same centre of creation, taking the extremes—Ireland and Northern China—it was scarcely possible to decide, without special knowledge of the question, to which part of the system any particular land-shell belonged. The species of terrestrial mollusk found in Marocco, Algiers, and Tunis were peculiar to North Africa; but the western forms in Marocco and Algiers had a strong affinity with the forms of Spain, while the land-shells of Tunis and Tripoli had an equally strong affinity with those of Sicily and Greece. He had collected every known species of North African mollusk, and found no exception to this rule; but in the scanty lakes of the Sahara there was a very interesting and perplexing contrast, for in those waters only two fishes had been described, one of which was not an inhabitant of any part of the Mediterranean, but was found in the hot springs of Upper Egypt and Nubia, and the other, which lived in brackish water, but never in salt, had only been found elsewhere upon the coast of Guinea. All the lacustrine and fluviatile shells of the Sahara were distinct from those of the Mediterranean; so that in that instance there was an exception to the ordinary rules of natural history limits. All the bird type of North Africa were identical with those of the Mediterranean basin, with one or two exceptions, such as the ostrich, which had the power of travelling all over the continent; and amongst the mammalia there were exceptions in the fennec-fox, the jumping, long-snouted mouse (*Macroscelides Rozeti*), and some other animals which were possessed of great powers of locomotion. The observations on the geology of North Africa went to show that, down to a recent period of the Tertiary epoch, a considerable portion of that country formed the bed of the ocean; and thus it was that the traces of inhabitants were found closely allied to the inhabitants of the coast of Guinea on the one side, and of the Upper Nile and the Ganges on the other. In fact, while the whole terrestrial flora and fauna of North Africa are essentially or with slight exceptions palæarctic, we have, in the few lingering fish and lacustrine mollusks, the living representatives in direct descent of the very animals who held undisputed sway over a warm ocean connected with the south in the time when glaciers were freezing on the island of Sicily during the Tertiary epoch.

Mr. Gwyn Jeffreys believed that they were all acquainted with Mr. Tristram's interesting book upon this subject, which was full of information.

Mr. Jeffreys also referred to a communication which had passed between Sir Charles Lyell and himself on the subject of some fossil shells found by the Rev. Mr. Tristram in the Sahara, which, in Mr. Jeffreys's opinion, indicated the former connection between this part of the transatlantic region and the coast of Italy.

The Rev. H. B. Tristram explained that some of the shells he sent to Sir Charles Lyell were all found in a bluish silt; but there were manifest traces of a fresh water deposit over this—there were fresh water semi-fossil shells, and upon the top of them were found traces of marine life of a much more recent date.

Report of the Committee for Dredging the Coasts of Durham and Northumberland.—The report, drawn up by Messrs. Hodge, G. S. Brady, and J. Alder, who had also furnished lists of the zoophytes, crustaceans, and algæ obtained, was read by Mr. G. S. Brady. Dredging on the extensive scale contemplated having been found this year impracticable, a portion of the grant only was expended. Making Holy Island their head-quarters, the authors dredged gradually out into the deepest water that could be found, hoping by this means to include all possible depths and every variety of bottom. With this view they left Sunderland on Monday, the 20th of July. There had been a long continuance of calm weather, and, though for a few days previous it had somewhat changed for the worse, there was every prospect of a favourable week. These expectations were disappointed; the sea became more boisterous—so much so, indeed, as to prevent dredging altogether, except in one or two sheltered spots near the shore, and under the lee of the Fern Islands. Once, for a few hours, when there was temporary lull, a depth was reached of forty-six fathoms at a distance of ten miles from shore; but this was the only occasion on which the deep water dredging, the chief object of the grant, could be carried on. The results of this short opportunity were interesting. A nudibranch new to Britain (*Here formosa*, Loven), a little sand-star very slightly known on our shores (*ophiura squamosa*), and several fine specimens of the mollusca characteristic of the district were obtained, besides several of the crustacea described for the first time in the report of last year. The capture of these species with only three or four hauls of the dredge abundantly proves the interesting nature of the ground, and gives promise of excellent results at some future time, when weather may be more propitious. With the hope of somewhat retrieving the ill success of the Holy Island excursion, the authors undertook a single day's work off the Durham coast in August. The weather was again unfavourable; but the authors succeeded in working the dredgers with tolerably good result, but did not add much to the list of mollusca, the Durham coast being exceedingly poor in this tribe, while, on the contrary, it seems to be rich in Echinodermata. The bottom, at depths greater than from twenty to twenty-five fathoms, seems to be uniformly muddy, the best dredging ground being probably in fifteen to seventy fathoms, at a distance of six or eight miles from shore.

Appended to the report were lists by Mr. Hodge, Mr. Brady, the Rev. A. M. Norman, and Mr. Alder, of the Zoöphytes crustacea and algæ obtained in the expedition.

Report of the Results of a Three Weeks' Dredging Cruise off Scarborough in 1863. By Mr. J. Leckenby, communicated by Captain Woodall.—The expedition was undertaken upon the promises, afforded by an examination last year, that it might be possible to define more satisfactorily than had yet been done the area, extent, and description of the invertebrates on the north-east coast of England. The examinations were made within ten miles of the shore, in from twenty to twenty-five fathoms, and near Hamborough Head, and the cost of the expedition was only about £30. Cannon-balls were carried to weight the dredger, in case the weather freshened; and the author recommended that the same precaution should be adopted in other personal expeditions.

Mr. Jeffreys said this report was not the less valuable because it did not announce the discovery of new species. We wanted to know more about old species. He remarked that in 1861 his yacht was ballasted with cannon-balls, some of which were used occasionally for weighting the dredges; but that in a heavy sea the bulk of rope that had to be paid out for eighty fathoms was so great that it was lifted by the waves, and it was impossible to keep the dredges on the bottom by any weight which could be raised by the windlass.

An Account of the Attempts to Transport Salmon to Australia. By Mr. T. Johnson.—A hopeful history of past failures (noticed in the daily press), which was supplemented by a discussion all the more interesting as the apparatus employed in the different attempts to carry out the ova and fry were exhibited. Mr. Johnson showed specimens of fry hatched from ova which had been buried for ninety days in the Wenham Lake Ice Company's Wells. In the same vessel were placed for comparison fish from the same ova, but which have been hatched in the ordinary way. These were considerably larger than those produced from the preserved ova.

Mr. Glyn stated that he had hatched ova in his back-kitchen; and, if conducted with care and cleanliness, the hatching of salmon was an operation that might be attempted by every one.

On the Roman and Imperial-Crested Eagles. By Mr. John Hogg.—In his paper Mr. Hogg alluded to the sculptured specimens of Rome, Palmyra, and Baalbec, and pointed out the classes to which they apparently belonged.

The Rev. H. B. Tristram had no doubt that in these sculptures too close an attention had not been paid to nature. No doubt much was added to make the birds more picturesque, and some of their adornments were very likely borrowed from the vulture.

On a New Species of Ione. By Mr. Spence Bate.—The genus *Ione* was first established by Col. Montagu, to receive a species of parasitic isopod crustacea, allied to *Bopyrus*, that he found beneath the carapace of *Callianapa subterranea*, a variety of prawn that burrows beneath the sand, and is found at the entrance of Falcombe Estuary, as well as in Plymouth Sound. This prawn has likewise been taken on the coast of France, and the parasite described by Milne-Edwards. The new species, which the author has named *Ione cornutus*, was brought home by Mr. Lord, the naturalist to the commission which had to determine the boundary line between British territory and that of the United States, and was found parasitic upon a species of *Callianapa*, which he took on the coast of Vancouver's Island. This species is much larger than that of the European form, and differs from it chiefly in having the lateral extremities of the zomite or segment which bears the antennæ posteriorly produced upon each side of the head, after the manner of lateral horns. All the legs are furnished with short and powerful claws, and the branchial appendages are arborescent and pendulous, to the inner extremity of which two appendages are attached, each of which inversely increases as the other decreases, so that one is largest nearest the body of the animal, while the other is longest nearest the caudal extremity. To the posterior of these the male animal attaches itself by means of the seventh pair of legs. The author likewise remarked a very considerable variation in the form of the larvæ from that of either of the parents, although it more nearly corresponded with that of the male than with that of the female.

Note on some Foraminifera dredged by the late Mr. Lucas Barrett at Jamaica. By Professor T. Rupert Jones, F.G.S., and W. K. Parker, Esq.—Of these specimens (evidently only the larger and more conspicuous members of a rich Rhizopodal fauna), some were taken at from fifteen to twenty fathoms—namely, *Quinqueloculina agglutinans*, *Q. pulchella*, *Orbiculina compressa*, and *O. adunca*; some at from fifty to one hundred fathoms—namely, *Orbiculina compressa*, *Dentalina acicula*, and *Orbitolina vesicularis*; and several others at from 100 to 200 fathoms—namely, *Dentalina acicula*, *D. communis*, *Cristellaria rotulata*, *C. cultrata*, *C. Calcar*, *Frondicularia complanata*, *Amphistegina vulgaris*, *Polytrema miniacea*, *Bigenerina nodosaria*, *Verneuilina tricarinata*, *Textularia Trochus*, *T. Barrettii*, *Cuneolina pavonia*, *Lituola Scorpiurus*, and *L. Soldanii*.

Cuneolina, a rare form, hitherto known only by figures and description given by D'Orbigny, proves (as suspected) to be a modification of *Textularia*, and *T. Barrettii* is intermediate between it and *Textularia* proper. The *Frondiculariæ* are remarkably large and beautiful; and the *Cristellariæ* and *Dentalinæ* are also large and relatively abundant.

This fauna is almost identical with the fossil *Foraminifera* of the *Pteropod-mare* of Jamaica—a Tertiary stratum, specimens of which were also given by the late Mr. Lucas Barrett to the authors of this notice.

Sub-Section D.

Notes on certain parts of the Anatomy of a young Chimpanzee. By Dr. Embleton.—On the 11th December, 1862, the body of a male chimpanzee, said to be about one and a half or two years old, was purchased for the College of Medicine. It was scantily covered with black hair, except around the muzzle and anus, where the hair was silvery grey. It was fresh and in good condition, the trunk rather bulky, the chest large, the arms strong and muscular, the hands partly covered on the dorsum of the palm with black hair, which did not extend to the fingers, the palmar surface smooth, naked, and of a dusky flesh colour, the thumb small and short, measuring, with its metacarpal bone, two inches, the middle finger being nearly five inches long; the legs comparatively short and weak, but fleshy to the heels; the feet rather more covered on the dorsum with hair than the hand, the toes and the sole resembling in smoothness, absence of hair, and colour the corresponding parts of the hands; the great toe—freely detached from the others, and resembling a strong thumb—measured with its metatarsal, two and a half inches, the third toe, three and a half inches. The thumb appeared much shorter, slenderer, and weaker than the other fingers, the great toe thicker, stronger, and shorter than the other toes. The following dimensions of parts were carefully taken:—Length from vertex to sole of heel, 2 feet 5 inches; length from top of sternum to tuber ischii, 1 foot $\frac{3}{4}$ inches; length of leg from top of femur to sole, 11$\frac{1}{2}$ inches; length of arm, from head of humerus to tip of middle digit, 1 foot 5 inches; length of hand and foot, each 5$\frac{1}{2}$ inches; circumference of chest at broadest part, 1 foot 4$\frac{3}{4}$ inches. The whole body weighed 16 lbs. 6 oz. avoirdupois. There were thirteen pairs of ribs, and therefore thirteen dorsal vertebræ, and in consequence the number of lumbar vertebræ was four. The diaphragm was well arched, and very strong; the psoas parvus muscle present and attached as in man. It was observed that in the hand the opponens pollicis muscle was wanting; the other muscles appeared to be disposed as those of the human hand. Professor Huxley having maintained, in his "Man's Place in Nature," that the hind limb of the so-called quadrumana is not a hand, but in reality a foot, it was necessary to direct particular attention to the muscles and tendons of that part. The posterior region of the leg was flat, and rather broad, and the fleshy parts of the lateral muscles were continued down to the ankles; the gastrocnemii were the principal feature hiding the presence of the soleus, and the absence of a plantaris. The peroneus brevis, which is inserted into the fifth metatarsal, arose here above the p. longus, the tendon of which, passing behind the outer ankle, ran obliquely into the sole of the foot. Next internal to the peronei was the rather slender extensor longus digitorum, the four tendons of which pass to the four outer toes. Between this muscle and the edge of the tibia were three muscles, one being a good deal overlapped by the other two. These two sent their tendons to be inserted, the *inner* into the inner side and under part of the first cuneiform bone, the *outer* into the base of the metatarsal bone of the great toe. The third muscle, at first deeply placed, came out, a little above the ankle, from beneath the other two, and its tendon, lying between that of the outer of the two and the tendon of the long extensor, ran to be inserted upon the dorsal surface of the base of the first phalanx of the great toe. On the dorsum of the foot we found the short extensor of the toes, a broader muscle, and extending further towards the inner side of the foot, than in man, its innermost slip diverging abruptly from the other part of the muscle, sent its tendon along the metatarsal bone of the great toe, parallel with the tendon of the last muscle, to be inserted into the base of the second or terminal phalanx of that toe. Each toe, then, in the chimpanzee, has, at least, a long and a short extensor for its phalanges, whilst the great toe has, in addition, one extensor for its metatarsal, and another for its cuneiform bone. Thus it may be said that there are four muscles of the great toe to ensure free and varied mobility in the sense of extension; the fifth toe has, as in man, in addition to its phalangeal extensor, the peroneus brevis attached to its metatarsal. Of the four extensors of the great toe, the two innermost appear to represent the tibialis anticus of human anatomy divided to secure variety of motion at the root of the great toe; the next would answer to the extensor proprius pollicis, only it is inserted into the base of the first instead of the terminal phalanx, and the fourth, or short extensor, is inserted into the terminal instead of into the first phalanx. Thus, in the peroneal and extensor regions we find all the corresponding human muscles represented, though there are certain modifications of arrangement.

We now turn to the sole of the foot. The three superficial muscles, the abductor pollicis, the flexor brevis digitorum, and the abductor minimi digiti were, as in the human sole, the first to come into view. On detaching the two last from the heel-bone, we found, towards the outer border of the foot, a flexor brevis minimi digiti, and in the middle region, the lumbricales and the tendons of the long and short flexors of the toes, with a small muscle accessory to the lumbricales arising from the long flexor tendon before its division. No musculus accessorius, arising as in man, was observed. At the outer border of the foot, when we abducted strongly the great toe, which can thus be brought to nearly a right angle with the rest of the foot, we saw, after a little dissection, the abductor pollicis as a short, strong, doubly penniform muscle, extending from the heel to the base of the first phalanx of the great toe; and close to it were the two halves of the flexor brevis, separated by the tendon of the flexor longus pollicis. Lastly, between the great toe and the second was clearly to be observed the adductor pollicis. All these muscles of the great toe are of great power; and, if they all act together, will very forcibly pull the great toe towards the middle of the sole of the foot; if the flexors of the other toes are made to act at the same time, the result will be a strong, rather oblique opposition of the great toe to the other four toes; and, if an object like the branch of a tree be placed in the sole, it will be grasped with much firmness. There remains, however, to be noticed the interesting arrangement by which that action is enforced and made more secure. It is this: the muscle called flexor longus pollicis is largely developed in the leg, extending down to the inner ankle, and ending in a strong tendon which runs into the sole of the foot close to the os calcis, and apart, as in man, from the other tendons; opposite to the root of the great toe, it divides into two slips—one, the lesser, runs outwards at a certain angle, being confined at first under a strong ligament, as under a pulley, to the great toe, as its long flexor tendon; the other, the larger division of the tendon, passes straight onward to the other toes, supplying each with an additional tendon, dividing and giving additional strength to the other or long flexor tendons of the toes. When this muscle is put into action, it will necessarily draw the great toe and the other four toes together, and that simultaneously, towards the middle of the sole. This or a similar connexion between the tendons of the flexor longus pollicis and the flexor longus digitorum, to which attention was lately called by Professor Rolleston in Section D of the British Association meeting at Newcastle, and which has been shown to be common in the feet of monkeys and also of man, and to occur, though rarely, even in the hand of man, by Mr. Church, in his valuable papers in the *Natural History Review* (to which I am unfortunately unable at the present time to refer), is to be found noticed, as regards the foot, by the "old masters" of human anatomy, Fallopius, Vesalius, and Albinus (who also figures it), as well as by the later anatomists, Bichat, Innes, Cruveillin, Lauth, Quain and Sharpey, and Gray.

This arrangement, therefore, in one form or other, for it is not always exactly the same, of a connexion between the above-named tendons in the sole of the foot, appears to be decidedly the rule, and it is undoubtedly one belonging to the foot rather than the hand. In our chimpanzee, however, the tendons given off from that of the fluxor pollicis longus seemed to run for some distance apart from the other tendons, with which they would cooperate in flexion. The absence of the human flexor accessorius may be presumed to be an advantage, as it provides more space in the sole for the object grasped, and, as no transversus pedis was found, the distal ends of the metatarsals are left more free to separate and enlarge the grasp. Next to the surface of the bones was beautifully seen the tendon of the peroneus longus muscle, running, in its bony and ligamentous groove to the base of the metatarsal bone of the great toe. When we consider, then, this elaborate mechanism, we cannot avoid the conclusion that we have examined the most admirable prehensile organ adapted to arboreal life that can be imagined; we must also feel persuaded that the hinder limb of the chimpanzee is indeed a foot, a prehensile foot of high perfection, surpassing even the hand itself in firmness and precision of grasp, but not a hand.

Digestive Organs.—The tongue, broad, fleshy, soft, and delicate, much resembled the tongue of a child. The milk-teeth, 20 in number, somewhat blackened, were all present. The total length of the alimentary canal was 15 feet 10 inches, or about 6½ times the length of the body. It was thus made up, viz.:—

	Ft.	In.
From lips to pharynx	0	3
„ pharynx to cardia	0	6
Length of stomach along greater curve	1	8½
„ duodenum	0	6
„ jejunum and ileum	10	0
„ caput cæcum coli	0	2½
„ appendix vermiformis	0	4½
„ colon, ascending, transverse, and descending	1	4½
„ sigmoid curve	0	7
„ rectum	0	4
	15	10

The œsophagus was somewhat narrow; the stomach shorter and more globular than in man; the left end well defined; the pyloric extremity, funnel-shaped and abruptly bent back towards the cardia, which it nearly touches, was slightly marked off at the bend by a constriction, and there were two other smaller constrictions between this part and the duodenum. The peritoneum appeared to be disposed very much on the human model—the foramen of Winslow, for instance, and the bag behind the stomach, were quite human.

The liver, with the gall bladder—all the parts at the transverse fissure being cut close off—weighed ten and a half ounces. Its vessels and membranes resembled those of a child. It was divided into two great lobes, right and left, and each of these had a small rather detached lobule situated behind the transverse fissure, and bordering on the fissure of the vena cava. The spleen was rather thin, long, and notched on its anterior border. The suprarenal glands large and of a yellow colour, contrasting with the kidneys, which were brown and unlobulated.

Brain.—The vault of the cranium having been removed, a correct cast of the whole cerebral surface was secured. Before the brain was in any way disturbed from its natural position, the relation of the posterior lobes of the cerebrum to the cerebellum was carefully observed, and the ten persons present, anatomists and naturalists, were unanimous in declaring that the former projected backwards over the latter a quarter of an inch. In the removal of the brain, the disposition of the membranes and nerves was observed to be strikingly similar to the corresponding human parts. The arterial circle of Willis was quite human. The entire encephalon, with arachnoid and pia mater, vessels and nerves attached, and as much of the spinal cord as could well be reached by an ordinary scalpel, was carefully removed, and its weight was found to be 13 ounces; and 6 drachms; from this 6 drachms must be deducted on account of injection matter in the larger vessels, which will make the proportional weight of the brain to that of the whole body very nearly as 1 to 20. The three great lobes of each cerebral hemisphere were seen well developed; the two anterior lobes formed together a blunt projection forwards, whilst beneath, their inner borders projected as ridges downwards; the under surfaces of these lobes were distinctly concave; the middle lobes were more prominent downwards than in man, and the projection of the posterior lobes beyond the cerebellum was as decided as before. After the brain had been for three days in spirits, the cerebral hemispheres measured in length 4⅜ in.; in breadth across the middle or widest part, 3¾ in.; the greatest width of the cerebellar hemispheres being 2⅞ in.; so that the cerebellum is markedly overlapped, laterally as well as posteriorly, by the posterior lobes of the cerebrum. The convolutions of the cerebral hemispheres were numerous, somewhat intricate, and partially symmetrical; two main sulci—traceable, one from the Sylvian fissure, the other from the under surface at the back of the crura cerebri—appeared to mark out even on the top of the hemispheres the division into anterior, middle, and posterior lobes. The island of Reil was quite evident. The corpus callosum, 1¾ in. in length, showed, as in man, distinct though minute transverse striations, and a longitudinal raphe formed of two slightly raised lines and an intervening groove. A section of the right hemisphere to expose the lateral ventricle showed as bold and as numerous projections of the external sulci into the white centrum ovale as are commonly seen in the human cerebrum. The ventricle itself was beautifully distinct, its anterior cornu curving boldly outwards in front of the striated body; its middle cornu winding outwards and downwards to the very bottom of the large middle lobe, and containing the hippocampus major with its pes corpus fimbriatum and choroid plexus; and its posterior cornu extending in an ample curve backwards and inwards, so as almost to touch the grey matter of the surface next the median line, and having within it, on its floor, the projection called hippocampus minor very distinctly marked. On the floor of the body of the ventricle were to be seen the corpora striata, the tæniæ semicirculares and the free edge of the fornix, with the choroid plexus; these last rested on the velum interpositum, which covers the third ventricle and the optic thalami, quite as in man. Further investigation in this direction was forborne, as it was thought desirable to preserve, for after inspection, the parts already enumerated. The fourth ventricle, as it is called, and its walls, as they could be examined without injury, were inspected; the cavity was closed behind, and had its small choroid plexus, after the human pattern; a second similar, but smaller, plexus existed on each side, just outside of the ventricle, and attached to the cerebellum. The point of the calamus scriptorius was well defined, but no white lines of origin of the auditory nerve were distinguished; on the other side of the medulla oblongata the usual nerves were met with, and the pyramids and olivary bodies clearly to be seen, but they were not further examined. The cerebellum was laminated, and had the great human divisions; on examining that part which overhangs the medulla oblongata, the inferior vermiform process, the uvula and tonsils, the flocks, and other parts enumerated in human anatomy, could, without difficulty, be dissected out; the superior vermiform processes also were evident on raising carefully the posterior lobes of the brain.

The conclusions arrived at in this short and imperfect investigation are, those which have already been made public by Professor Huxley—viz., 1st, that the chimpanzee is not, properly speaking, quadrumanous, but that it possesses four prehensile extremities, two hands, namely, and two feet; and, 2nd, that the brain of the chimpanzee differs from the brain of the man only in size and weight; therefore, in the smaller size and extent of its cerebral convolutions; the same parts without exception exist in both brains. Whether the cerebral matter of the ape differs from that of man in microscopic characters, or how otherwise it may differ, are problems yet to be worked out.

The President (Professor Rolleston) expressed the great pleasure the hearing of this extremely valuable paper had given him, and had no doubt that his experience was that of all present.

Section E.

On a Proposed Inter-Oceanic and International Transit Route across Central America. By Capt. Bedford Pim, R.N.—In defining the boundaries of Central America, the author included the whole country, from the first narrowing of North America at Tehuantess to its final expansion into South America at Darien, between 7° and 18° north latitude and 77° and 94° west longitude, the narrowest part being only twenty-seven miles across. Having entered briefly into the history of the country, showing why it is still shut out commercially from the rest of the world, Captain Pim proceeded to show the uses to which its great resources might be applied, and the vast importance of turning them to account in the interests of Great Britain. Just as the Isthmus of Suez is the high-road to Asia and Africa, the Isthmus of Panama ought to be the direct route to Western America, Japan, Australia, and Polynesia. When steam became an ordinary motive power in commerce, the Americans, perceiving the immense commercial and political importance of Central America's isthmus, loudly proclaimed the famous Monroe doctrine, and soon afterwards made a great stride in furtherance of their monopolizing policy, by the establishment of the Panama Railway. This accomplished, it only remained to connect the districts of Central America with New York by Pacific steamers to make our discomfiture complete. This was on the point of being done when the war broke out, and the vessels had to be employed for other purposes. England, therefore, had had a narrow escape of losing a large and profitable trade, and it was desirable that she should open a Pacific steam line of her own to the Australian colonies with the least possible delay. The leading official in the colonial government lately came to this country with the offer of £80,000 per annum as the contribution of New South Wales and New Zealand towards a postal subsidy for a line *viâ* Panama; but the imperial Government refused to grant the remaining moiety. This refusal, if persisted in, might lead to the loss of our Australian colonies. We were mainly indebted to the rapid transit *viâ* Suez for the salvation of our Indian possessions; it would be curious if we were compelled to open the Panama route to save our Australian empire. Captain Pim then described his personal efforts

to open a transit route through Nicaragua by means of a railroad from ocean to ocean. Examining the coast to see if any harbours existed which could be made available for the termini of a transit route, he found an anchorage thirty miles from Grey Town capable of being adapted to the purpose required. On the Pacific side only one port—Realejo—existed of sufficient size to meet the requirements of the case. In February 1862 he laid the matter before the Royal Geographical Society, and in the following year sailed from Southampton, accompanied by Messrs. Salmon and Collinson, civil engineers; and they were enabled to penetrate the primeval forest as far as the lake Nicaragua, a distance of 75 miles, and to make a rough section of the track. Having ascended the river Rama, a distance of 35 miles, the party separated—one of the engineers, with a party of Indians, going eastward, the other westward, Captain Pim himself proceeding up the river San Yuam, across the lakes Nicaragua and Managua, to Realejo. The next point was to obtain a charter; but this was a matter of great difficulty, as the States of San Salvador and Nicaragua were at war, and in the latter State itself a revolutionary party had risen against the government. The Americans also, on strong commercial and political grounds, opposed his schemes; and at last he was informed that a charter could not be obtained till the re-assembling of the Congress of Nicaragua; and, as that would not take place for several months, he rejoined his engineers, and was gratified to learn that there were no insurmountable engineering difficulties in the way of the proposed railway. [See Section G for Mr. Salmon's remarks hereupon.] The rest of the paper was occupied with a description of the advantages to be expected from the construction of the proposed railway. Amongst these one was that it would open a connexion with a country more adapted than any other in the world for the growth of the best cotton.

From Tientsin (North China) to the Capital of Mantchu Tartary. By Captain George Fleming.—The paper described a journey performed by the author in company with Mr. Meakin in 1861. The travellers did not adopt the Chinese dress, as they were advised to do, believing that it was not only difficult to maintain the disguise—the discovery of which might lead to consequences of a very serious nature—but that they would consult their own safety, and produce a good impression in the natives by appearing in the English costume, and making no secret of the object of their journey. The explorers passed the Great Wall of China, from which they extracted a brick (which was exhibited), and gleaned much valuable information about the country, which information is admirably incorporated in the paper.

Sir Harry Parkes said that he concurred in the propriety of Englishmen travelling in China in their own national costume. Owing to the recent treaty regulations, Englishmen could now travel through the length and breadth of China; and they could do so with great security if they avoided those parts where the Chinese themselves would be likely to fall into danger from banditti.

A few Notes on Sir Charles Lyell's "Antiquity of Man." By J. Crawford, Esq., F.R.S.—An abstract of this paper (read before the Ethnological Society in April last) will be found at page 389 of the last volume.

On the Physical and Mental Characters of the Negro. By Dr. James Hunt, President, Anthropological Society.—The author said he had been collecting facts upon the subject for another society; but he was induced to bring it before the Association from the fact that it had never been brought before a scientific audience in England. In discussing the question, he would have nothing to do with anything but the full-blooded, woolly-headed, typical negro, to the exclusion of the half-breed. The object of the paper was to determine the position which one well-defined race occupies in the genus *homo*, and the relation or analogy which the negro race bears to animated nature generally. He had selected the negro race, as it seemed to be an intermediate form between the highest and lowest existing races of man. In discussing the question, he had nothing to do with the origin of man, for analogies did not necessarily include relationship. The skin and hair are by no means the only things which distinguish the negro from the European, even physically; and the difference is greater still mentally and morally. The skeleton of the negro is generally heavier, and the bones are larger and thicker, in proportion to the muscles, than those of the European. The bones are also whiter from the abundance of calcareous salts. The thorax is compressed; the leg is longer than in Europeans, but is made to look shorter on account of the ankle being only between 1⅛ in. to 1½ in. above the ground; the heel is both flat and long. Burmeister has pointed out the resemblance of the foot and the position of the toes of the negro to that of the ape; and many observers have noticed that the negroes have frequently used the great toe as a thumb. After pointing out several minor particulars, in which the negro differs from the European, and quoting the opinions of several writers on the capacity of the negro cranium, the paper recommended caution in accepting such capacity of the cranium as any absolute test of the intellectual power of any race. The brain of a negro has a smoky tint, not found in that of a European. The hair is essentially different; and the voice resembles sometimes the alto of a eunuch—there being a peculiarity about it by which he can always be distinguished. Dr. Louis Büchner, after summing up the peculiarities of the negro, says they exhibit the most decided approach to the ape. Other distinguished anatomists and physiologists had expressed a similar opinion. The assertion that the negro only requires an opportunity for becoming civilized is disproved by history. The African race have had the benefit of the Egyptian, Carthaginian, and Roman civilization, but nowhere did they become civilized. The many cases of civilized blacks are not pure negroes; but, in nearly every case where they had become men of mark, they had European blood in their veins. In the West Indian Islands it has frequently been observed that all the negroes in places of trust which require intelligence have European features. Negro children are precocious; but no advance in education can be made after they arrive at the age of puberty—they still continue mentally children. It has been said that the present slave-holders of America no more think of rebellion amongst their full-blooded slaves than they do of rebellion amongst their cows and horses. That was because the tranquillity of negroes in their approach to civilization resembled the content of domestic animals. From all the evidence bronght forward, the writer of the paper saw no reason to believe that the pure negro ever advances further in intellect than an intelligent European boy of fourteen years of age. After citing authorities to prove the low psychological character of the negro, the paper continued:—"We now know it to be a patent fact that there are races existing which have no history, and that the negro is one of these races. From the most remote antiquity, the negro race seem to have been what they now are." The writer could see no evidence to support the opinion of some writers that the negro had degenerated from some higher form of civilization. Everywhere we see the European as the conqueror and the dominant race; and no amount of education will ever alter the decrees of Nature's laws. The general deductions he would make were—First, that there is as good reason for classifying the negro as a distinct species from the European as there is for making the ass a distinct species from the zebra; second, that the negro is inferior intellectually to the European; third, that the analogies are far more numerous between the negro and the ape, than between the European and ape. There was in the negro that assemblage of evidence which would induce an unbiassed observer to make the European and negro two distinct species.

Mr. Galton said that among the negroes of Africa he found more abject, superstitious, and brutal tribes than elsewhere in the world. When the chiefs die, the tribes generally disintegrate and disappear, afterwards combining with other tribes. The tribes of Africa are remarkable for their rapid formation and rapid dissolution. The chiefs are often of alien descent; and most of the large kingdoms are ruled by men of the blood of the Arabs and other Asiatics. Negroes do not lie at a uniform dead level; he thought that occasionally the race had produced clever men. At the same time, he did not admit that this fact covered the more apparent fact of the slavish and brutal condition of the vast majority of the African race.

Mr. W. Craft said, although he was not a pure African, he thought he was black enough to say a few words. With regard to their common origin, he believed that black and white men had all had one Creator, and were descended from a common parent. With regard to the woolly hair and thick skull of the negro, he believed these had been given them by a kind Providence to protect them from the effects of their sultry climate. Mr. Craft then proceeded to give a number of instances in which the native African had been educated into a high degree of mental superiority. He concluded by quoting the well-known lines of Cowper:—

> Fleecy locks and black complexion,
> Cannot forfeit nature's claim;
> Skins may differ, but affection
> Dwells in white and black the same.

Mr. Carter Blake said, if the woolly hair and thick skull of the negro were given to him by a bountiful Providence to fit him for living in a tropical climate, the inhabitants of Brazil were suffering great injustice, for they had neither woolly hair nor thick skulls. With regard to the philanthropic element, he thought it ought not to have been introduced into the discussion.

The reading of this paper and the discussion were many times interrupted by hisses and counter-cheers, in a manner more suited to a political than a scientific audience.

Section F.

On the Opening and Extension of Durham University Academical Endowments. By Mr. J. Haywood.—The following is an abstract:—After stating the history and giving details of the constitution, the author referred to the recommendations of the Commission under the Act of 1861, and to the opposition given by the Dean and Chapter to the ordinances drawn up by the Commissioners. The paper concluded as follows:—"Parliament would probably sanction with readiness well-devised plans for the advancement of the higher education of the country, if more public interest were expressed in favour of forming educational endowments. To the inhabitants of Newcastle, the vicinity of a university, with a revenue of £7000 a year, must be of importance; and, if the proposed appointment should be carried into effect, the examinations for half of the open scholarships annually vacant might be conducted in Durham; and the competition for the remaining half of the scholarships might be carried on in Newcastle. Under such a scheme there would be an amount of £600 per annum in 20 open scholarships of £30 each a year, tenable for two years, and a subsequent amount of £1000 in 20 open scholarships of £50 a year, tenable for one year, which might be devoted to the encouragement of literary and scientific studies in this great centre of industry and intelligence."

A long and interesting discussion ensued, in the course of which the Rev. Professor Temple Chevallier eloquently defended the University, and stated that the blame appeared to have been applied to the Dean and Chapter because they objected to illegal proceedings. Whatever blame was to be attached to the Dean and Chapter, they were exercising their proper and legitimate authority. The University itself united in opposition, and the result was that the Commissioners were found to have exceeded their powers. Their ordinances were returned to them; and it appeared to him they would have acted a more dignified part, and one more likely to give satisfaction, if they had pocketed the affront and gone on with making some new ordinances. They did not like to find themselves in the wrong. He could assure every person who had spoken and given expression to a desire that the best should be done for the University of Durham, that their wishes would be met with perfect sympathy from those with whom he was acting. He was not a member of the Chapter, and therefore did not know precisely what had been done; but he did know that the Dean and Chapter, with the concurrence of the Bishop, were arranging a scheme for the future management of the University. That scheme would, in a very considerable degree, be founded upon the best of the recommendations of the Commissioners themselves.

On the Coventry Freehold Land Society. By Mr. C. H. Bracebridge.—The author describes the working of the Society, which has been wound up in consequence of the great depression in the principal trade of the town, during the last four years.

On the Mortality in Lancashire during the year ended at Midsummer 1863, being a continuation of a paper read before the Section at the Cambridge meeting, by Mr. Frederick Purdy.—The cotton famine was felt in several of the Lancashire Unions, through a marked increase in pauperism, at the beginning of 1862. It increased till the Midsummer following, when the distress had assumed most serious proportions, which continued to augment still more rapidly up to December, when the maximum of destitution was reached; thence to Midsummer last it has steadily declined, leaving, however, the unions principally affected by a rate of pauperism which is between three and four times their normal proportion. The deaths in Lancashire during the year ended Midsummer were compared with the average of the three years ended at Midsummer 1862. The average was 61,263; last year's deaths

64,828, being an increase of 3505, or 5·8 per cent. No attempt was here made to correct the figures for the increase of population. A similar comparison was made for three contiguous divisions. Yorkshire, where the deaths were respectively 46,454 and 49,955, being an increase of 3501, or 7·5 per cent., the rate of increase was here higher than of Lancashire. The Northern Division, deaths 25,499 and 26,876, which showed an increase of 1377, or 5·4 per cent., very close to the Lancashire rate of increase; and the North Midland Division, deaths 26,578 and 25, 181, which showed a decrease of 1397, or 5·3 per cent. Limiting the inquiry to the principal cotton manufacturing unions properly so called, a group of sixteen was formed of the most distressed. The two first belong to Cheshire, the others to Lancashire. They are the unions of Stockport, Macclesfield, Wigan, Bolton, Bury, Chorlton, Salford, Manchester (with Prestwich), Ashton-under-Lyne, Oldham, Rochdale, Haslingden, Burnley, Blackburn, and Preston. The average number of deaths in the three years was 43,152, and the deaths in the year ended Midsummer last, 43,951—that is to say, an increase of 799, or 1·9 per cent., as compared with the average. But it was found, upon correcting the numbers with respect to the increase of population, that the average should be 42,353; the deaths for the year ended Midsummer last 41,574; this then exhibits, instead of an increase, a decrease of 779 deaths, or 1·8 per cent. The sixteen unions were then arranged in three sections as in the Cambridge paper. Section A contained 7 unions, which at Midsummer 1862 were least pauperized; the increase of pauperism as against 1861 was at that time 34 per cent. in the lowest burthened, and 100 per cent. in the highest. It was shown by comparison of the deaths in the year ended Midsummer 1863 with the average of the three preceding years, that Wigan, Chorlton, and Oldham had increased 8·7, 13·9, and 16·9 per cent. respectively; that Macclesfield, Salford, Bolton, and Bury had decreased 5·0, 0·9, 2·2, and 4·1 per cent. respectively. Section B consisted of 4 unions; the increase of pauperism at Midsummer 1862 varied in this section from 120 to 145 per cent. The deaths in Manchester (with Prestwich) had increased 2·7 per cent. The others had decreased—Rochdale 6·6 per cent., Burnley 16·0 per cent., and Haslingden 1·6 per cent. Section C was formed of 4 unions, the pauperism had increased from 283 in the lowest union to 458 per cent. in the highest. Stockport had increased in deaths 12·0 per cent., and Ashton-under-Lyne, the most distressed union in the whole district, judging by the numbers on the books of the relieving Officers and of the Relief Committees, 3·9 per cent. In the Preston Union there was a decrease of 8·7 per cent. in the deaths. This union felt the distress earlier, and, till it was surpassed by Ashton, heavier than any other. Last autumn typhus fever prevailed at Preston. Dr. Buchanan, the Government Inspector who visited the district, reported the fever as "the steady follower on famine," and gave, it may be remembered, a very gloomy account of the physical depression of the unemployed operatives generally, yet in the very year of this fever, which soon disappeared, there were 256 less deaths in the union than on the average of the three preceding years. Blackburn, also a very distressed union, shows a slight decrease of mortality. Liverpool, though the largest cotton port in Europe, has been but slightly affected by the cotton famine; the pauperism there is, and has been, but little in excess of its usual amount. It has not been found necessary to institute any Relief Committees. Nevertheless, the increase in the death-rate there has been very great. The average number of deaths in the three years was 8198; in the year ended Midsummer 1863 it was 9475, being an increase of 1277, or 15·6 per cent. In the contiguous Union of West Derby the deaths were respectively 4915 and 6199, increase 1284, or 26·1 per cent. These figures present a remarkable contrast to the average death-rate of the cotton manufacturing unions during the same period. Mr. Purdy observed that the increase of mortality in the Manchester, Ashton-under-Lyne, Chorlton, Oldham, and Wigan Unions appeared, from the registrar's returns, to have been caused by the prevalence of epidemics in those districts, especially from scarlatina, diptheria, measles, and small pox. The decrease in deaths in the other unions has been attributed by various registrars to the generally temperate state of the weather, to the change from employment in the atmosphere of the mills to the open air, and to the greater maternal care bestowed upon the young children. The possible saving of life from the last-named cause may be very great indeed, when it is remembered *that one-half of the large mortality of the Lancashire towns is usually made up of children under five years of age.*

Statistics of the Tanning Trade of Newcastle-upon-Tyne. By the late Mr. T. C. Angus. Communicated by Mr. J. Potts. — Thirty years ago Newcastle appears to have taken the lead in the tanning trade, but now Leeds occupies that position. The present state of the tanning trade in Newcastle and Gateshead is represented by the following statistics:—

		VALUE ABOUT £ s. d.
Bark used during the year 1862,	1780 tons	9753 0 0
Valonea . . . ,, . . .	174 ,,	2202 0 0
Gambier . . . ,, . . .	50½ ,,	980 0 0
Divi divi . . . ,, . . .	55 ,,	772 0 0
Shumac . . . ,, . . .	314 ,,	4315 0 0
Oil, Cod, and Linseed ,, . . .	118 ,,	5310 0 0
Lime and Pigeon Dung		324 0 0
Tallow		100 0 0
Dyes		800 0 0
Stripping materials		100 0 0
Eggs		600 0 0
Alum and Soda		200 0 0
Dogs' Manure		280 0 0
	£.	25,736 0 0
RAW MATERIALS PUT INTO WORK.		
Butchers' Hides, 38,020,713 tns.	24,908 0 0	
Calf-Skins . . 62,124, 84 ,,	9320 0 0	
Sheep-Skins . 46,452 . . .	2322 0 0	
Seal-Skins . .163,000 873 ,,	40,750 0 0	
		77,300 0 0
	£.	103,036 0 0
The above will produce in value when manufactured—		
Butchers' Hides	47,500 0 0	
Calf-Skins	16,373 0 0	
Sheep-Skins	3871 0 0	
Seal-Skins	67,915 0 0	
		135,659 0 0

Section G.

Report of Gun-Cotton Committee, Mechanical Portion. (The chemical portion was communicated to Section B, and was so recorded.) Mr. J. Scott Russell was reporter in this Section.—The report acknowledges at its outset that greater effects are produced by gases generated from gun-cotton than by gases generated from gunpowder; and it was only after long and careful examination that the committee were able to reconcile this fact with the low temperature at which the mechanical force is obtained. The great waste of force in gunpowder constitutes an important difference between it and gun-cotton, in which there is no waste. The waste in gunpowder is 68 per cent. of its own weight, and only 32 per cent. is useful. This 68 per cent. is not only waste in itself, but it wastes the power of the remaining 32 per cent. It wastes it mechanically, by using up a large portion of the mechanical force of the useful gases. The waste of gunpowder issues from the gun with much higher velocity than the projectile; and, if it be remembered that in 100lbs. of useful gunpowder this is 68lbs., it will appear that 32lbs. of useful gunpowder gas is wasted in impelling a 68-lb. shot composed of the refuse of gunpowder itself. There is yet another peculiar feature of gun-cotton. It can be exploded in any quantity instantaneously. This was once considered its great fault; but it was only a fault when we were ignorant of the means to make that velocity anything we pleased. General von Lenk has discovered the means of giving gun-cotton any velocity of explosion that is required by merely the mechanical arrangements under which it is used. Gun-cotton in his hands has any speed of explosion, from 1 foot per second to 1 foot in $\frac{1}{1000}$ of a second, or to instantaneity. The instantaneous explosion of a large quantity of gun-cotton is made use of when it is required to produce destructive effects on the surrounding material. The slow combustion is made use of when it is required to produce manageable power, as in the case of gunnery. It is plain, therefore, that, if we can explode a large mass instantaneously, we get out of the gases so exploded the greatest possible power, because all the gas is generated before motion commences, and this is the condition of maximum effect. It is found that the condition necessary to produce instantaneous and complete explosion is the absolute perfection of closeness of the chamber containing the gun-cotton. The reason of it is, that the first ignited gases must penetrate the whole mass of the cotton; and this they do, and create complete ignition throughout, only under pressure. This pressure need not be great. For example, a barrel of gun-cotton will produce little effect and very slow combustion when out of the barrel, but instantaneous and powerful explosion when shut up within it. On the other hand, if we desire gun-cotton to produce mechanical work, and not destruction of materials, we must provide for its slower combustion. It must be distributed and opened out mechanically, so as to occupy a larger space; and in this state it can be made to act even more slowly than gunpowder; and the exact limit for purposes of artillery General von Lenk has found by critical experiments. In general, it is found that the proportion of 11lbs. of gun-cotton, occupying 1 cubic foot of space, produces a greater force than gunpowder, of which from 50 to 60lbs. occupies the same space, and a force of the nature required for ordinary artillery. But each gun and each kind of projectile requires a certain density of cartridge. Practically, gun-cotton is most effective in guns when used as ¼ to ⅓ weight of powder, and occupying a space of $\frac{1}{10}$th of the length of the powder-cartridge. The mechanical structure of the cartridge is of importance as affecting its ignition. The cartridge is formed of a mechanical arrangement of spun cords; and the distribution of these, the place and manner of ignition, the form and proportion of the cartridge, all affect the time of complete ignition. It is by the complete mastery he has gained over all these minute points that General von Lenk is enabled to give to the action of gun-cotton on the projectile any law of force he pleases. Its cost of production is considerably less than that of gunpowder, the price of quantities which will produce equal effects being compared. Gun-cotton is used for artillery in the form of a gun-cotton thread or spun yarn. In this simple form it will conduct combustion slowly in the open air, at a rate of not more than 1 foot per second. This thread is woven into a texture or circular web. These webs are made of various diameters; and it is out of these webs that common rifle cartridges are made, merely by cutting them into the proper lengths, and inclosing them in stiff cylinders of pasteboard, which form the cartridges. (In this shape its combustion in the open air takes place at a speed of ten feet per second.) In these cylindrical webs it is also used to fill explosive shells, as it can be conveniently employed in this shape to pass in through the neck of the shell. Gun-cotton thread is spun into ropes in the usual way up to two inches diameter, hollow in the centre. This is the form used for blasting and mining purposes; it combines great density with speedy explosion. The gun-cotton yarn is used directly to form cartridges for large guns by being wound round a bobbin so as to form a spindle like that used in spinning-mills. The bobbin is a hollow tube of paper or wood, the object of the wooden rod is to secure in all cases the necessary length of chamber in the gun required for the most effective explosion. The gun-cotton circular web is inclosed in close tubes of india-rubber cloth to form a match line, in which form it is most convenient and travels with speed and certainty. In large quantities, for the explosion of mines, it is used in the form of rope, and in this form it is conveniently coiled in casks and stowed in boxes. As regards conveyance and storage of gun-cotton: it results from the foregoing facts that 1 lb. of gun-cotton produces an effect exceeding 3 lbs. of gunpowder in artillery. This is a material advantage, whether it be carried by men, by horses, or in waggons. It may be placed in store, and preserved with great safety. The danger from explosion does not arise until it is confined. It may become damp and even perfectly wet without injury, and may be dried by mere exposure to the air. This is of great value in ships of war, and in case of danger from fire, the magazine may be submerged without injury. As regards its practical use in artillery, it is easy to gather from the foregoing general facts how gun-cotton keeps the gun clean and requires less windage, and therefore performs much better in continuous firing. In gunpowder there is 68 per cent. of refuse, or the matter of fouling. In gun-cotton there is no residuum, and therefore no fouling. Experiments made by the Austrian committee proved that 100 rounds could be fired with gun-cotton against 30 rounds of gunpowder. From the low temperature produced by gun-cotton the gun does not heat. Experiments showed that 100 rounds were fired with a 6-pounder in 34 minutes, and the gun was raised by gun-cotton to only 122° Fahrenheit, whilst 100 rounds with gunpowder took 100 minutes, and raised the temperature to such a degree that water was instantly evaporated. The firing with the gunpowder was, therefore, discontinued; but the rapid firing with the gun-cotton was continued up to 180 rounds without any inconvenience. The absence of fouling allows all the mechanism of a gun to have much more exactness than where allowance is made for fouling. The absence of smoke promotes rapid firing and exact aim. There are no poisonous gases, and the men suffer less inconvenience from firing in casemates, under hatches, or in closed chambers. The fact of smaller recoil from a gun charged with

gun-cotton is established by direct experiment; its value is ⅔ of the recoil from gunpowder, projectile effect being equal. To understand this may not be easy. The waste of the solids of gunpowder accounts for one part of the saving, as in 100 lbs. of gunpowder 68 lbs. have to be projected in addition to the shot, and at a much higher speed. The remainder, General von Lenk attributes to the different law of combustion. But the fact is established. The comparative advantages of gun-cotton and gunpowder for producing high velocities are shown in the following experiment with a Krupp's cast-steel gun, 6-pounder. With ordinary charge 30 oz. of powder produced 1338 ft. per second. With charge of 13½ oz., gun-cotton produced 1563 ft. The comparative advantages in shortness of gun are shown in the following experiments, 12-pounder:—

	Calibres.	Charge.	Velocity, feet per second
Cotton, length,	10	15·9 oz.	1426
Powder, ,,	13½	49 (normal powder charge)	1400
Cotton, ,,	9	17	1402

—As to advantage in weight of gun, the fact of the recoil being less in the ratio of 2 : 3 enables a less weight of gun to be employed, as well as a shorter gun, without the disadvantage to practice arising from lightness of gun. As regards durance of gun, bronze and cast-iron guns have been fired 1000 rounds without in the least affecting the endurance of the gun. As regards its practical application to destructive explosions of shells, it appears that, from a difference in the law of expansion, arising probably from the pressure of water in intensely-heated steam, there is an extraordinary difference of result—namely, that the same shell is exploded by the same volume of gas into more than double the number of pieces. This is to be accounted for by the greater velocity of explosion when the gun-cotton is confined very closely in very small spaces. It is also a peculiarity that the stronger the shell the smaller the fragments into which it is broken. As regards mining uses, the fact that the action of gun-cotton is violent and rapid in exact proportion to the resistance it encounters, tells us the secret of its far higher efficacy in mining than gunpowder. The stronger the rock, the less gun-cotton, comparatively with gunpowder, is necessary for the effect; so much so that, while gun-cotton is stronger than gunpowder as 3 to 1 in artillery, it is stronger in the proportion of 6·274 to 1 in a strong and solid rock, weight for weight. It is the hollow-rope form which is used for blasting. Its power of splitting up the material is regulated exactly as wished. As regards military and submarine explosion, it is a well-known fact that a bag of gunpowder nailed on the gates of a city will blow them open. In this case gun-cotton would fail. A bag of gun-cotton exploded in the same way is powerless. If one ounce of gunpowder is exploded in scales, the balance is thrown down; with an equal force of gun-cotton nothing happens. To blow up the gates of a city a very few pounds of gun-cotton, carried in the hand of a single man, will be sufficient, only he must know its nature. In a bag it is harmless; exploded in a box it will shatter the gates to atoms. Against the palisades of a fortification, a small square box containing 25lbs., merely flung down close to it, will open a passage for troops; in actual experience on palisades a foot diameter and eight feet high, piled in the ground, backed by a second row of eight inches diameter, a box of 25lbs. cut a clean opening nine feet wide. To this three times the weight of gunpowder produced no effect whatever, except to blacken the piles. Against bridges:—A strong bridge of oak, 24 feet span, was shattered to atoms by a small box of 25lbs. laid on its centre; the bridge was not broken, it was shivered. As to its effects under water:—In the case of two tiers of piles, in water 13 feet deep, 10 inches apart, with stones between them, a barrel of 100lbs. gun-cotton, placed 3 feet from the face and 8 feet under water, made a clean sweep through a radius of 15 feet, and raised the water 200 feet. In Venice a barrel of 400lbs. placed near a sloop in 10 feet water, at 18 feet distance, threw it in atoms to a height of 400 feet. All experiments made by the Austrian Artillery Committee were conducted on a grand scale—36 batteries, six and twelve pounders (gun-cotton), having been constructed, and practised with that material. The reports of the Austrian commissioners are all based on trials with ordnance, from six pounders to forty-eight pounders, smooth-bore and rifled cannon. The trials with small fire-arms have been comparatively few, and are not reported on. The trials for blasting and mining purposes were also made on a large scale by the Imperial Engineers' Committee, and several reports have been printed on the subject.

Sir Wm. G. Armstrong said it was impossible to listen to the report which had been read without being very much impressed with the great promise there was of gun-cotton becoming a substitute for gunpowder; but at the same time there were certain peculiar anomalies about it which he certainly should like to have cleared up, and, until they were, he could not feel that perfect confidence in the results that he wished to do. In the first place, with regard to the heat evolved, they were told that, with such a quantity of gun-cotton as would produce a given quantity of gas, a certain initial velocity was imparted to the projectile, and that the heating effect upon the gun was much less than when a similar velocity was produced by an equivalent quantity of gunpowder. The absence of heat in the gun implied an absence of heat in the gas. Where was the projectile force to come from, if there was no heat in the gas? He could not, for his part, conceive how it was possible of explanation. The next point that occurred to him was with regard to the recoil. It was stated that the recoil was very much less. That was ascribed to the absence of solid inert matter in the charge, which, in gun-cotton, was next to nothing. If the recoil was only two-thirds that of gunpowder, it would require, in order to account for that difference, a much larger quantity of solid matter than there really was in the case of gunpowder. The report stated that the use of gun-cotton enabled them to reduce the length of the gun. It was quite certain, however, that with a short gun they could not get an equal initial velocity as with a long gun. If the initial velocity were increased there was more danger of bursting the gun than with gunpowder. Because if they got any velocity, or an equal velocity, with the shorter gun, it must be concluded that it was done by virtue of a greater initial pressure and an earlier action upon the shot. That necessarily implied a greater strain upon the gun at the first explosion, and that would necessitate the employment of stronger guns. He should have expected a smaller velocity by a shorter gun, for the action of the gas was necessarily shorter than in a longer gun. The heat question, however, was to him the greatest puzzle of all.

Mr. Siemens, having briefly spoken on the dynamical question involved in the matter, suggested that the greater heat imparted to the gun in the case of gunpowder might be owing to the greater amount of solid matter, which, taking up the great heat of the gases under a pressure of some 400 atmospheres, imparted a portion of the same by radiation to the side of the gun, while in the case of gun-cotton gases only were produced, which could only impart heat to the gun by the slower process of conduction, and left a larger margin of heat to be developed in force by expansion.

Admiral Sir E. Belcher stated his opinion that the reason the gun was not heated by an explosion of gun-cotton might be because the gases had not time to heat the gun owing to the rapidity of the explosion, which was slower in the case of gunpowder; or that it might arise from the greater amount of fouling in the case of gunpowder.

Captain Maury said that this report was something more than interesting, because it was so exceedingly suggestive; and it appeared to him that it afforded them an element of security by giving the preponderance on the side of defence. Ever since steam had been applied to purposes of naval warfare it had been considered a matter of very great doubt by many professional men how far ordinary steamers and men-of-war, where forts were to be passed at the mouth of a river, were capable of sustaining the fire of such forts and passing up the river. And to show that there was ample time for them to do so, they had only to recollect the fact of steamers having fought forts for several hours. In the Crimea and at Charleston the steamers had remained under fire for several hours—a much longer time than was necessary to enable them to pass the forts and go higher up the river into a place of safety where they could do damage to the enemy. Iron-clads had rendered this much more easy than it had previously been. If then their principal defences failed them at the mouth of a river in this way, the question was whether they should not have recourse to mining for the destruction of the invading vessels? He himself had been engaged upon the subject. He found this difficulty in employing gunpowder, that, in order to be sure of destroying the vessel as she passed in a given line by means of gunpowder, the magazines must be in actual contact, or very nearly in actual contact, with the side of the vessel; otherwise the probability was that the vessel would not be destroyed. Lately they had the intelligence of a vessel having had a mine exploded under her on the James River. That magazine contained several thousands of pounds of powder. The vessel did not know that the mine was there; but the mine did not destroy the vessel. It merely threw up a column of water, which washed some of the men overboard. His own conclusion was that, to make sure of destroying a vessel after she had passed the forts, they must mine the channel in such a manner that the vessel must come in contact with one or other of the mines. It was found that wooden vessels to contain the powder would not do. They would not confine the powder long enough to produce a sufficient force. It was necessary to make them of stout boiler-iron. It would not do to leave the magazines on the top of the water, and it would not do to put them at the bottom, for then there would be a cushion of water between the bottom of the ship to be destroyed and the magazine, which would protect the vessel. In short, they had to anchor them beneath the surface with short buoy-ropes, at a depth proportioned to the kind of vessel expected to come up. But, when they made the magazine of boiler-iron, they had to have buoys to float it so large that they were always in danger of being carried away by the vessels crossing the line of magazine. The plan was to place those magazines in a ring in such a position that the vessel in passing would have to come in contact with at least one, and probably two of them. It was necessary to place those magazines of powder so that when you saw the vessel in that range you had only to bring the two poles of the galvanic battery together and make the explosion. There was, as already stated, a difficulty in using gunpowder. But, since gun-cotton had the remarkable effect of destroying a vessel—he did not know her strength—at a distance of 18 feet, and that not vertically, but laterally, the question arose whether they might not fortify and protect those channel ways by placing a ring of gun-cotton magazines along the bottom; but, at any rate, if that was not necessary, they could float them at any depth, and out of reach of the vessels generally using the channel. That appeared to him to be one of the most important uses of gun-cotton, and it was one which would give safety to cities which were some distance from the mouths of navigable rivers. He trusted that, in the event of the committee continuing their labours, they would address their attention to this important point.

Admiral Sir E. Belcher stated that the explosion of powder under water was once done under one of his own vessels to clear away ice. He placed it upon the ground, thinking that its explosion would blow the ice clear of her bows without touching the vessel. There was, however, sufficient water to form a cushion, and when the explosion took place it only produced a great wave, upon which the vessel rose.

Professor Pole said what they wanted was something to show the varying pressure of the gases in the gun—in fact, an indicator diagram.

Mr. J. Scott Russell set himself to clear away the many difficulties which attended this very difficult subject. How was it that in gunpowder and in gun-cotton, where there were equal quantities of gas put in, the gas in the case of gunpowder was raised to an enormously high temperature, and came out at at an enormously high pressure, showing that they had gas enormously expanded by heat; whereas in the case of gun-cotton the gas came out quite cool, so that you might put your hand upon it, and the gun itself was quite cool? He (Mr. Russell) had a theory. Steam was a gas, and steam expanded just by the same laws as other gases did. A great deal of the gas of gun-cotton happened to be steam. Let them conceive 100 lbs. of gun-cotton shut up in a chamber that just held it. They had got there all the gases that had been spoken of, but they had also got 25 lbs. of solid water—about one-third of a cubic foot of water—in that chamber. What did they do with it? They put fuel, they put fire to it. They heated the whole remaining pounds of patent fuel. If, then, they considered the gun-cotton gun as the steam gun, they got rid of two difficulties. They would have, first, the enormous elasticity of steam; and, secondly, they would get the coolness of it. They all knew that, if they put their hand to expanded high pressure steam, it had swallowed up all the heat and came out quite cool. He believed that the gun-cotton gun was neither more nor less than Perkins's old steam-gun, with only this difference, that you bottled up the fuel and water, and let them fight it out with each other. They did their work and came out quite cool. He hoped, however, that it was understood that he did not dogmatize. He put all he had said with a note of interrogation upon it—a remark in which Professor Tyndall concurred.

On Regenerative Gas-Furnaces as applied to Iron-Works. By Mr. C. W. Siemens.—The principle of the regenerative gas-furnaces has already been explained to the scientific public by Professor Faraday, in a lecture delivered by him at the Royal Institution in June 1862. Its general construction, and the history of its invention and gradual development, form, moreover, the subject of a paper which was read by Mr. Siemens in January 1862 before the Institution of Mechanical Engineers. Since that period this principle of heating has been extensively applied in England, France, Germany, and other countries, to glass-houses, for heating gas retorts and muffles for metallurgical purposes, for melting steel, and for puddling and welding iron. The ostensible object of this invention being to save fuel, it could hardly be expected that it would be favourably looked upon in Newcastle, the greatest coal-producing district of the whole world; but experience has proved that there are other advantages resulting from its application which, in the case of puddling and working iron, are even superior in value to mere saving of fuel in a money point of view. A diagram was exhibited representing a furnace for welding and working iron, and the gas-generator connected with it. The heated chamber is of the usual form; but, instead of a fireplace, there are four passages (two at each end of the chamber) leading downwards into four regenerators or chambers filled with loosely-piled fire-bricks. The lower extremities of these four regenerator chambers communicate with two cast-iron reversing valves. The gas arriving from the producer through a pipe is directed by the valve into one regenerator or other, according to the position of the valve. The gas then ascends through the one regenerator, where it takes up the heat previously deposited in the brickwork, and issues into the furnace at a point where it meets with a current of heated air, arising from the second regenerator, to effect its combustion. The products of combustion pass away through the opposite regenerator and the reversing valves into the chimney flue. The last-named regenerators receive at this time the waste heat of the furnace, becoming heated at their upper extremity to the temperature nearly of the furnace itself, but remaining comparatively cool towards the bottom. Every hour or half-hour the direction of the currents is reversed by a change of the valve lever; the heat before deposited in the one pair of regenerators is now communicated to the air and gas coming in, while the waste heat replenishes the second pair of regenerators. The gas-producer consists of two inclined planes, upon which the fuel descends, being gradually deprived in heating of its gaseous constituents, and finally burnt to carbonic oxide by the air entering through the grate at the bottom of the inclines. Water also assists in the decomposition of the ignited coke at the bottom, converting it into carbonic oxide and hydrogen gas. The saving of fuel which has been effected by this arrangement amounts to from 40 to 50 per cent. In the application to re-heating and puddling furnaces a saving of iron has been effected, owing to the mildness of the gas flame, of from 3 to 4 per cent. of the entire quantity put in; the iron also welds more perfectly than it does in the ordinary furnaces. Smoke is entirely obviated. By another arrangement the regenerative principle has been applied also to coke ovens, the result being that the separation of the coke from its gaseous constituents is effected without losing the latter. In placing the coke ovens, constructed on this plan, near the works where the iron is puddled and re-heated, the latter operation may be entirely effected by the gas generated in producing the coke necessary for the blast furnace in producing the pig iron. The gas resulting from the regenerative coke oven may be used to heat the blast and boilers connected with the blast furnace. These latter improvements are now in course of being carried into effect on a large scale. The gas produced from the last-named producers is of a highly illuminating character, and may be used for that purpose in preference to the hydrocarbon now manufactured for that purpose by a much more expensive process. J. N. L.

ART.

ART NOTES.

PRINCE ALEXANDER TORLONIA in Rome has had a number of new Etruscan paintings from Vulci examined there by the celebrated connoisseur P. Garucci, who has pronounced them to be the most important of their kind hitherto found. They are painted in chiaro-oscuro, are of great variety, and of extremely clear, distinct, and clean execution. There are altogether thirty figures in life-size, taken partly from Greek, partly from Vulcanic history and mythology. Thus, on one of the pictures Amphiaraos is seen as Ruler of the Shadows, who, the right foot upon a rock, contemplates Sisyphus in vain endeavouring to roll his stone up the summit of the mountain. Other scenes are taken from the "Iliad" and the "Thebaid." Prince Torlonia will place these valuable antiquities, together with other finds, in his museum at Trastevere, where the public will soon have an opportunity of examining them.

PROFESSOR KAULBACH is busy executing his great painting of the Emperor Frederic Barbarossa. At the same time his last cartoon, "The Age of the Reformation," is being transferred to the walls of the new museum.

THE Austrian sculptors have been called upon to send in models for the statues of the forty-two heroes who, according to the Emperor's wish, are to be placed in the vestibule and in the principal hall of the Museum of Arms in the Vienna Arsenal.

THE painter Franz Reichardt of Munich, a renowned adept in the art of peeling ancient frescoes of edifices and transferring them upon wood, has lately been successfully employed in taking off the frescoes from the famous Imhof House in Augsburg, which dates from the time of the Romans.

THE first stone has been laid of a Murillo monument in Seville.

THE French National Collections of Pictures have been enriched during the last dozen years by the addition of some of the finest works of art in the world. There is a Holy Family by Perugino, said to be the *chef-d'œuvre* of the master, bought at the sale of the gallery of the King of the Netherlands for 53,302 francs. There is also a very fine Rubens, the portrait of Baron Vieg, acquired at the same sale at the price of 15,934 francs. From Marshal Soult's collection two magnificent pictures were secured—a Murillo, "The Conception," for 613,300 francs; and a marine picture, by Vandervelde, for 11,550 francs. The sale of that celebrated collection took place in 1852. Since then, in 1854, according to the *Building News*, four new pictures were bought for the Louvre, one of which, a Murillo (the Virgin surrounded by Glory), was the gift of the Emperor. In 1858 eighteen pictures were added, including five works of Murillo, Zurbaran, and the elder Herrera, which cost 300,000 francs. Two paintings of Rubens were bought in 1859, and nine in 1861, including a Hobbema (a Windmill), bought for 52,500 francs. Last year there were five pictures added, including a Velasquez—a full-length portrait of Philippe IV., which cost 23,000 francs. The Chapter of Nôtre-Dame, also, last year presented to the Louvre forty-one pictures of the French school. Among these is the "Magnificat," which Jouvenet, having become paralyzed, painted with the left hand in the year 1716.

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MUSIC.

THE MUSICAL FESTIVALS.

EACH of the country festivals has this year brought out its new oratorio. Strangely enough the fortunate composer in each case is a foreigner, and in each case his recognised position in the world of art has yet to be attained. Worcester has taken up Mr. J. R. Schachner, a German, who settled in England some ten or eleven years ago, while Norwich has stretched out the hand of protection to Mr. Silas, a Dutch composer of considerable ambition and promise. Mr. Schachner's oratorio is not altogether new, for it was brought out on one occasion at Berlin, before its author came over to this country, and it was also once performed at Exeter Hall, a wealthy amateur defraying all the expenses. But, though "Israel's Return from Babylon" cannot be described as an actual novelty, the directors of the Worcester Festival are as much entitled to credit for producing it as though it had never been attempted before. Never, in the course of the century-and-half that these west-country festivals have been established, has any unfamiliar work been attempted. The meetings of the three choirs were originally instituted for the mere amusement of the members. As they were daily engaged in church-music, sacred compositions entered somewhat largely into the schemes arranged for their annual meetings; and, some hundred and fifty years ago, a worthy dignitary of Hereford Cathedral suggested that collections should be made among the audience for the orphans of the clergy and choir. Charity and harmony now went hand in hand, and from this time the institution continued to increase in usefulness and importance. The aid of professional singers was called in at first from the neighbouring cities, and afterwards from London; the orchestral players were then recruited in the same manner; and the works performed were more and more ambitious, until at last these unambitious meetings have acquired considerable celebrity. The railroads, which, it was feared, would ruin them by bringing metropolitan performances within easy reach of local amateurs, have, on the contrary, had the effect of benefiting the festivals to an unanticipated extent, not merely by attracting all the dwellers of neighbouring towns, but by affording increased facilities for the co-operation of all the talent to be found in England. If the iron way encourages the people of Worcester to make an excursion to Exeter Hall, it also enables Exeter Hall to go down into the country. The oratorio performances of Worcester, indeed, have been almost identical with those at the Sacred Harmonic Society, and, where there has been any difference, it has been in favour of the provincial meeting. At the festivals of the three choirs there has, indeed, been one drawback to a completely unexceptionable performance. It has always been the custom for the organist of the Cathedral to conduct the performances, and, whatever his talent may be, his want of practice in directing a large body of executants, and of familiarity with much of the music performed, is found to be a serious obstacle to his success. Under these circumstances it has hitherto been thought advisable to perform none but familiar works; and the announcement of a *quasi*-novelty in the shape of "Israel's Return" created considerable surprise. We were gratified to find that the performance of Mr. Schachner's oratorio was by far the most satisfactory feature of the festival; and, as all are bound to say that Mr. Done's conducting frequently left very much to be desired, especially at the evening concerts, we feel the more pleasure in complimenting him upon the admirable representation of the new work. Mr. Schachner has, indeed, been most fortunate, both at Exeter Hall and at Worcester. At each place his ideas have been interpreted with the most scrupulous care. Unfortunately, his ideas are not of the most exalted character. Making every allowance for the uninteresting and unsuitable nature of the libretto, which is chiefly compiled from Moore's "Sacred Lyrics," we must confess that Mr. Schachner has scarcely once risen to the height of his subject. The choruses are, for the most part, weak—the subjects being generally trivial, while the working out rarely betrays any inventive power. There is one chorus, however—that at the end of the third part, "Put on thy strength, O Zion!"—which is so cleverly and carefully constructed as to warrant the assumption that the composer in the other portions of his work has not done justice to his powers. We do not at all appreciate his singular device of giving the words conveying the Divine threats and promises to a repetition literally monotonous by the male voices of a single note. The device, which is three times repeated, becomes at last as wearisome as it is weak. An evening hymn, "Hark, 'tis the breeze of twilight," for soprano and tenor, treated as a strict canon, is melodious, and it will very likely become popular; but it is quite wanting in devotional feeling. There is also a soprano cavatina, "Come not, O Lord, in thy dread robe of splendour," which deserves praise as much for the exceedingly delicate manner in which it is instrumented as for its own effective melody. It would be idle to particularize each number of the work; but we cannot refrain from calling attention to the very commonplace bass air, "Awake! arise!" because in the second part the composer has unfortunately stumbled upon certain words which were also set for the same voice by a man of the name of Handel, in a work called "The Messiah."

Mr. Schachner could scarcely find in Europe a more efficient quartet than Mdlle. Titiens, Miss Palmer, Mr. Sims Reeves, and Mr. Santley; and we need scarcely add that they did more than justice to his work.

With this exception, the Worcester festival offered but little for remark. We were pleased to observe that two Roman Catholics, one of whom was the Duc d'Aumale, were on the list of stewards, the majority of whom are clergymen of the Established Church, and, on the other hand, that the

"Requiem" was performed in the Cathedral with Latin words. This almost consoled us for the transmutation of the Mount of Olives into Engedi—a clumsy expedient for obviating the introduction of our Saviour as one of the personages of the oratorio. The festival was attended by ten thousand persons—that is to say, by more than two thousand in excess of the former meeting.

The Norwich festival has also proved a great success, but not so the new oratorio. We defer our notice, as Mr. Benedict's cantata, the other novelty of the festival, has not yet, at the time we write, been performed, and next week we can speak of both works together.

In our last week's notice, by-the-bye, the word *new* was accidentally omitted from the concluding sentence:—"As nothing *new* has as yet been given, we will reserve our remarks upon the performances."

MUSICAL NOTES.

Mdlle. La Grange, now performing in Spain, has contrived to gain the favour of the Spaniards to such a degree that, on the two first nights of her appearance at Valencia and Alicante, 5400 bouquets and 100 doves and canary-birds were thrown to her. A young Spaniard bought the glass out of which she had been drinking for 40 douros.

Franz Liszt has composed a hymn for the thousandth anniversary of the inauguration of Christianity in Panonnia by the Bishops Cyril and Method, celebrated a short time since at San Girolamo degli Schiavone, in Rome.

Richard Wagner is gone to Pesth, where he will conduct a series of concerts.

M. Meyerbeer is residing at Dieppe for the benefit of his health, which is greatly restored since his arrival.

A contribution to the history of music has appeared under the title "Esquisse historique de la Musique Arabe aux Temps anciens," with drawings of instruments, and forty melodies, with notes and harmonies, by Alexander Christianowitsch.

At Düsseldorf has just appeared Julius Tausch's music to Shakespeare's "As you Like It" ("Was ihr Wollt").

THE DRAMA.

REOPENING OF DRURY LANE, THE SURREY, &c. &c.

QUITE towards the end of the third and last act of his new comedy of "Nature's above Art," brought out on Saturday evening last at Drury Lane, Mr. Falconer makes one of his characters say, in reference to the scenes in which he has been playing a leading part, "Well, I'm blest if I can tell who's who, or what's what!" A roar of hearty laughter responded to this rough but judicious summing up of a case in which the audience had been for three hours taxing their powers of comprehension in vain. The foundation of the plot is simple enough—the changing of two children at their birth; but Mr. Falconer has so elaborated the superstructure, and made it up of so many parts, that exploration leads to the bewilderment of whoever ventures within its mazes, not excepting the architect himself. Instead of working out of obscurity into clearness, Mr. Falconer has taken the opposite course, and at every step mines down into deeper and more unfathomable darkness. The result is a mystification instead of a story. Judged as a comedy of character, "Nature's above Art," though it does not in any sense justify its ambitious title, is less open to objection; we cannot say, however, that even in this respect it is comparable with the author's previous works of the same class. The characters, of whom there are a large number, are all drawn with a tolerably firm hand; but, though they have individuality, they have little or no freshness, not to say originality, and they have a tendency to isolate themselves, and to deliver themselves of long speeches, in which persons, times, motives, and feelings are referred to with a redundant wordiness that brings the movement of the piece continually to a standstill. In one scene two young ladies interchange ideas on all sorts of things, including pearl-powder and rouge; and one of the two condemns the use of cosmetics, because they injure the skin by "stopping up the pores!" a fact, no doubt, and correctly stated, but one which it seems more in the way of Mr. Erasmus Wilson than of Mr. Falconer to promulgate. But it is in dealing with morals, social position, and class-distinctions that he is most wordy, recalling, both in tone and diction, the sounding disquisitions so plentifully scattered through the earlier novels of Sir Edward Bulwer-Lytton. Hitherto he has argued on man's rights from a strongly democratic stand-point; but in "Nature's above Art" he defends the innate superiority of "blue" over "puddle" blood, and enforces the axiom that "a silk purse cannot be made out of a sow's ear," or a clod become a gentleman. He does not in the present case argue with such ear-taking success as in his "Extremes" and "Woman;" but he still wins applause from an audience with whom he is a favourite, and who try hard to like his latest work. The acting is almost without exception excellent. Mr. Walter Lacy plays a vivacious young gentleman—*Mr. Meander Wilderspoon*, a sort of *Dazzle*—with a dash and finish that remind us that the capital school in which he studied is nearly extinct. By an entanglement of circumstances, the explanation of which is unintelligible, *Mr. Meander Wilderspoon* turns out to be the son and heir of a rich Warwickshire gentleman, *Mr. Mordaunt* (Mr. Ryder), who has been deceived into rearing the son of a country ostler as the heir of "Mordaunt Hall." *Mr. Wilderspoon*, having fallen in with this "puddle-blooded" youth, has undertaken the office of companion and guide to him, the young cub being largely supplied with money from his supposititious father, in the idea that he was to travel in the East, while the youth himself prefers the excitements of "life" in London, under the guidance and protection of *Mr. Wilderspoon* and *Mr. Billpuddick* "of the P.R." The "sow's ear" of the plot, named *Mr. Edgar Mordaunt* (Mr. G. Belmore), gets his friend and Mentor, *Wilderspoon*, to write his letters for him, so that the fact of his son being a vulgar and illiterate boor is kept from *Mr. Mordaunt* until the time arrives for the young gentleman to return to his home. The discovery is then made that he is in no sense a *Mordaunt*, and, in spite of the clever and ready-witted explanations and apologies of the unabashed *Mr. Wilderspoon*, supported by the best physical-force arguments of *Mr. Billpuddick*, the heir of *Mordaunt* is rejected on the evidence of *Mrs. Confidence Caudle*, the housekeeper at the Hall. During *Mr. Edgar's* sojourn in London, he had paid *dis*honourable attention to one *Sarah Stiggins* (Miss Charlotte Saunders), a housemaid whom he had met at Cremorne, but whom he is startled to find employed at *Mordaunt* Hall. *Sarah* loves him with an intensity that has its source in the romantic literature of the *London Journal*, and expects to be made the "Lady of Mordaunt Hall;" but the shabby clod who is her idol has declined to raise her to such a splendid height. *Mrs. Confidence's* revelation, however, has the effect of making *Mr. Mordaunt* believe that the child born to him was not a son, as he had been led to imagine, but a daughter, and that daughter *Sarah Stiggins*, who is forthwith transferred from the servant's offices to the drawing-room, as the heiress of "Mordaunt Hall." *Mr. Edgar*, the ostler's son, makes an unfortunate investment of a sum of money given to set him in the way of earning an honest livelihood, and comes abjectly to plead for assistance from the exalted *Sarah*, whose heart melts at the appearance of her former hero's wretchedness; and another explanation, made by a *Mr. Oldacre* (Mr. Barrett), a brother-in-law of *Mr. Mordaunt's*, ousts her from her high position in favour of *Mr. Meander Wilderspoon*—otherwise the veritable *Mr. Edgar Mordaunt*. A mysterious young lady, named *Miss Blanche Maydew*, is, by a second revelation of *Mrs. Confidence's*, discovered to be the daughter of old *Mr. Oldacre*—and *Mrs. Confidence* herself! We cannot form even a guess at the motive which induced these two elderly persons to keep their marriage private during half their lifetime, or how it has happened that *Miss Blanche Maydew* has not sooner been recognised as their child, or why the recognition was made at the particular moment chosen. These are atoms merely of the darkness which the author has delighted to conjure up. The most prominent and the most effective character in the piece is that of *Sarah Stiggins*, which finds a perfect representative in Miss Charlotte Saunders, who delivers with striking point the inflated language of the high-romantic penny journals, in the heroines of which she loves to see herself. She is, in fact, the life of the piece, which, however, we fear, is not likely to enjoy a long run. Mrs. Falconer played the housekeeper, *Mrs. Confidence Caudle*, with great care; but it is a part in which she has no opportunity for the display of the heartiness and blunt good-nature in the exhibition of which she was so admirable in her husband's "Extremes."

We sincerely hope that the failure of this piece will not injuriously affect the management of Drury Lane this season. We see that various novelties are announced as in active preparation, and the production of these may set all right. On Monday night a new two-act serio-comic drama, by Mr. F. C. Burnand, entitled "The Deal Boatman," is to be brought out; and during the coming month, Lord Byron's "Manfred" is to be revived, with splendid scenery by Mr. Telbin, the mystic hero to be sustained by Mr. Phelps.

At the Surrey, also on Saturday evening last, a new season was begun, under the joint management of Mr. Shepherd and Mr. James Anderson, with a new play in five acts, entitled "The Scottish Chief; or, the Maid of Ellerslie." This piece, which, according to the bills, has been "arranged and prepared" by Mr. James Anderson, who himself played the principal character, is a reproduction in a new form of an old melodrama founded on the once popular novel of the "Scottish Chiefs," by Miss Jane Porter. Mr. Anderson has laboured at the dialogue and spun out the plot in a manner that has been damaging to his piece in every respect. He has forgotten that "brevity is the soul of wit," and has thereby missed the opportunity of producing an effective melodrama. Two of his five acts are entirely *de trop*, and half his speeches would be doubly telling if they were reduced to half their original length. The story of Sir William Wallace's patriotic struggle is told from a romantic point of view—discarding history, and making the "hero of Scotland" a singularly sentimental warrior. In the mounting great pains have been taken; and it is only fair to say that in this respect the piece is worthy of comparison with the dramas produced by Macready five and twenty years ago at Drury Lane—dramas in which Mr. Anderson himself played well-remembered parts. We hope that this care—avoiding the extravagance of mere show—is to be the rule followed by the managers of this theatre. The reputation of the Surrey for effective scenery is certainly well sustained by the piece under notice, and well-deserved applause was specially called forth by several of the more elaborate set-scenes. The termination of the play with the execution of *Wallace* on Tower-hill was the cause of an interesting demonstration. On the fall of the executioner's axe a gory head was lifted, whereupon there was an instant outburst of objection on the part of the audience, who would not be appeased until Mr. Anderson had given a promise that the incident should be expunged from his piece. He confessed to have erred, under the idea that the public demanded everything *real* upon the stage. The summary manner in which the merely realistic in art was thus condemned by the unbidden instinct of propriety in an assemblage of working men and women is worth noting.

During the absence of Mr. J. L. Toole in the country a Mr. A. Woods from the Bath and Bristol theatres has been playing at the Adelphi. He is a good stock low-comedian, thoroughly up to the business of the stage, but apparently without any extraordinary comic powers. At the same theatre Mrs. Stirling has been playing during the week in "The Tragedy Queen," in which she enacts the part of *Mrs. Bracegirdle*, curing a youth who has fallen in love with her at the theatre by disgusting him with assumed coarseness and callous-heartedness when he is admitted to her presence. Her change of manner from the charming and witty *Mrs. Anne Bracegirdle* to the slovenly, snuff-taking, harsh-spoken actress is one of the most perfect bits of high-class acting on our stage, and is fully equal to that of exquisite Madame Albert, the original representative of the part in French.

The Haymarket is announced to reopen on Monday evening next, the chief attraction being Mr. and Mrs. Alfred Wigan.

To-night the Princess's closes with the benefit of Mr. Walter Montgomery, who is said to contemplate taking some other London theatre. The result of his prolonged experiment has been to place him, upon the whole, in a favourable light before the public, who will be glad to retain him. He has proved himself to be a good, though not a great, actor; and good actors are not so plentiful that we can afford to slight them. We shall be glad to see him, by attempting less, achieve more positive success than has at present rewarded his endeavours.

The Director of the Odessa Theatre is about to open a German Theatre at that place. He has begun by entering into engagements with the ballet-master Golinelli and his troop at Vienna.

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